SATELLITE SERVICES SYSTEM ANALYSIS STUDY

volume 2A — satellite & services
user model — Appendix

prepared for
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FOREWORD

This study was conducted for the Lyndon B. Johnson Space Center and directed by Contracting Officer's Representatives (COR), Mssrs. Reuben Taylor and Gordon Rysavy. Grumman Aerospace Corporation's study manager was Mr. John Mockovciak Jr.

This final report is presented in seven volumes:

Volume 1 - Executive Summary

Volume 2 - Satellite and Services User Model

Volume 2A - Satellite and Services User Model - Appendix

Volume 3 - Service Equipment Requirements

Volume 3A - Service Equipment Requirements - Appendix

Volume 4 - Service Equipment Concepts

Volume 5 - Programmatics

A Satellite User Model (SUM) was initially developed to assess the extent of satellite service needs (e.g. deployment, retrieval, exam, or repair) and potential manned, remote, and automated involvement called for by satellites/payloads within the user model. Appendix A documents the SUM; Appendix B contains the services needs assessment; Appendix C details the extent of manned, remote, and automated involvement; and Appendix D contains an update of the SUM which is consistent with the S/SUM reported in Volume 2 of this final report.

ACRONYMS

Abbreviations and acronyms used frequently throughout the Satellite Services System Analysis Study (SSSAS) are defined as follows:

ACS - Attitude Control System
AFD- Aft Flight Deck
ASM - All Sky Monitor
AXAF - Advanced X-Ray Astrophysics Facility
CCTV - Closed Circuit Television
C & DH - Command & Data Handling
C & DL - Command & Data Link
C/O - Checkout
DDT&E - Design, Development, Test & Evaluation
DoD - Department of Defense
DOF - Degrees of Freedom
EMU - Extra-Vehicular Mobility Unit
EVA - Extra Vehicular Activity
FSS - Flight Support System
GAC - Grumman Aerospace Corporation
GEO - Geosynchronous Earth Orbit
GRAVSAT - Earth Gravity Field Survey Mission
GRO - Gamma Ray Observatory
GSE - Ground Support Equipment
HEAO - High Energy Astronomy Observatory
HPA - Handling & Positioning Aid
IR - Infrared
IRAD - Independent Research and Development
IUS - Inertial Upper Stage
IVA - Internal Vehicular Activity
JSC - Johnson Space Center
KSC - Kennedy Space Center
LAPC - Large Area Proportional Counter

LASS - Large Amplitude Space Simulator

LASSII - Low Altitude Satellite Studies of Ionospheric Irregularities

LEO - Low Earth Orbit

LOS - Line-Of-Sight

MDF - Manipulator Development Facility

MFR - Manipulator Foot Restraint

MMS - Multimission Modular Spacecraft

MMU - Manned Maneuvering Unit

MRV - Manned Reconnaissance Vehicle

MTV - Maneuverable Television

NOSS - National Oceanic Satellite System

OAO - Orbiting Astronomical Observatory

OBC - Onboard Checkout

OCC - Operations Control Center

OCP - Open Cherry Picker

OMS - Orbital Maneuvering System

PAM A - Payload Assist Module (type) A

PAM D - Payload Assist Module (type) D

PIDA - Payload Installation & Deployment Aid

PM I/II - MMS Propulsion Module I & II

POCC - Payload Operations Control Center

POM - Proximity Operations Module

RCS - Reaction Control System

RMS - Remote Manipulating System

ROM - Rough Order of Magnitude

S/C - Spacecraft

SE&I - System Engineering & Integration

SMM - Solar Maximum Mission

SRM - Solid Rocket Motor

SSS - Satellite Services System

SSSAS - Satellite Services System Analysis Study

S/S - Subsystem

S/SUM - Satellite and Services User Model

STE - Special Test Equipment

STS - Space Transportation System

TDRS(S) - Tracking & Data Relay Satellite (System)

TMS - Teleoperator Maneuvering System

TV - Television

UARS - Upper Atmospheric Research Satellite

UV - Ultraviolet

VSS - Versatile Service Stage

WBS - Work Breakdown Structure

WETF - Weightless Environment Training Facility

WIF - Water Immersion Facility

WRU - Work Restraint Unit

XTE - X-Ray Timing Explorer

APPENDIX A

SATELLITE USER MODEL

A Satellite User Model (SUM) was generated to identify future satellite programs and orbital payloads which could potentially benefit from satellite services performed by the Shuttle Orbiter. Appendix A presents the Satellite User Model that was compiled and used to assess satellite servicing needs and the extent of manned involvement required to perform these service functions.

Reference documents, telephone contacts, and visits to several satellite sponsoring organizations were used to identify a data base of more than 200 satellites and payloads (planned to be operational from 1981 to 2000). The listing excludes multiple satellite launches, revisits, and retrievals that may be associated with various satellite programs.

Reference documents used to develop the Satellite User Model included:

- NASA 5 year plan (1981 - 1985)
- STS Flight Assignment Baseline
- Battelle Low Energy Mission Model
- Future planning documents (OSTA, OSS, etc.)
- OAST Space System Technology Model
- DoD Mission Catalog
- NORAD Spacecraft Identification Listing

Pages A3 through A27 document the Satellite User Model, which is presented by planned year of launch. Included with each satellite listing are the following pertinent data relating physical and mission characteristics:

- SAT. NO. - Satellite number as referenced in NASA OAST Space System Technology Model, May 1980
- SPONSORING ORGANIZATION - Refers to NASA Program Office, Military, Foreign, or Private sources

- CATEGORY - A (Approved) - Missions which have been authorized for implementation
  - P (Planned) - Missions designated as possible new starts within the next 5 years
  - C (Candidate) - Missions considered for possible initiation within 10 years
  - O (Opportunity) - Potential missions for start beyond ten years and/or those missions of a speculative nature.

SPACECRAFT (S/C) CHARACTERISTICS

- Mass (Kilograms)
- Length (Meters)
- Diameter (Meters)
- Delivery Orbit - Orbit altitude at deployment by the Orbiter (Kilometers)
- Final Orbit - Satellite operational orbit altitude (km) and inclination (Degrees)
- Launch Site - Eastern test range (Cape Kennedy) or Western test range (Vandenberg AFB)
- Carrier - Upper stage used to boost payload to final orbit or to support payload in delivery orbit
- Manif Number - NASA flight assignment manifest flight number, June 1980
- File Number - The prefix code is unique to each satellite and data source reference as follows:
  - NASA = NASA STS Mission Model, Oct 1977
  - LEP = Low Energy Payload Model, Sept 1979
  - MDC = Mission Data Catalog, Oct 1979
  - STP = Space Technology Program (selected unclassified missions)
  - FAM = NASA Flight Assignment Manifest, June 1980
  - STM = NASA Space Systems Technology Model, May 1980
  - AVN = Aviation Week
    FROM MISSION DATA CATALOG
  - MML = MMS Mission, June 1980

- GSF = Goddard Space Flight Center reports, July 1980
- 5 Yr = Five Year Plan (1981 - 1985)
- A&A = Astronautics and Aeronautics.

The activities reported herein were supported by Grumman's Independent Research and Development (IRAD) efforts.

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SATELLITE OPERATIONAL PARAMETERS.

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
IRAS-IR ASTRO SAT-R	A-2	OSF/JPL	A	1020	3.60	.60	900	900	99	WTR	DELTA		044STM
IECM-IND ENV CONTAM	OI-2		A	338.00	1.30	.80	277.8	277.8	40.30	ETR	1 PALLET	STS-1	203FAM
IECM-IND ENV CONTAM	OI-2		A	338.00	1.30	.80	277.8	277.8	40.30	ETR	1 PALLET	STS-2	208FAM
FILE-FEAT IDENT LAND	OI-1	OSTA	A	34.00	1.30	.90	277.8	277.8	40.30	ETR	OFT PALL	STS-2	223FAM
IECM-IND ENV CONTAM	OI-2		A	338.00	1.30	.80	277.8	277.8	38.00	ETR	1 PALLET	STS-3	225FAM
PDRS TEST ART.			A				277.8	277.8	38.00	ETR	UNIQ STR	STS-3	227FAM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
*** 82		***											
SMM-SOLAR MAX RETURN	S-1		A	2315	4.00	2.30	575	575	28.50	ETR	DELTA		119STM
IECM,GAS TEST ARTICL			A							ETR		STS-4	228FAM
TDRS-A	C-1	WU	A	1905	7.00	2.90	278	36786	28.50	ETR	IUS-2	STS 5	250STM
INTELSAT F5		COM	A	1940	6.00	2.60	296	35786	28.50	ETR	SSUS-A	STS-6	251AVN
TELESAT E		CAN	A	1000	2.00	2.10	296	35786	28.50	ETR	SSUS-D	STS-6	252AVN
SPAS-01 STS PALL SAT			A	1800	1.50	4.20	296	296	28.50	ETR	SPE STR	STS-6	257AVN
DOD 82-1		DOD	A							ETR		STS-4	261AVN
SBS-C		SBSC	A	1000	2.00	3.60	296	35786	28.50	ETR	SSUS-D	STS-6	264AVN

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	* * * 83 SAT. NO.	* * * SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORBIT ORB-KM	ORBIT INCL	LAUNCH SITE	PIEP	MANIF NUMBER	FILE NUMBER
LANDSAT D	R-2	OSTA	A	1597	3.00	2.00	278	705	98	WTR	MMS		061STM
DEF MET SAT PROG 1		A	A	1080	3.00	1.00	1538	1538	98	WTR			120LEP
SBS-B		SBSC	A	1000	2.00	3.60	296	35786	28.50	ETR	SSUS-D	STS-8	253AUN
TDRS-B			A	2270	7.00	2.90	278	35786	28.50	ETR	IUS-2	STS-7	254AUN
INTELSAT B(F-6)			A	1940	6.00	2.60	296	35786	28.50	ETR	SSUS-A	STS-8	255AUN
TELSAT F		CAN	A	1000	2.00	2.10	296	35786	28.50	ETR	SSUS-D	STS-8	256AUN
SPACELAB-1 LONG MOD		OSS	A	15800	18.00	4.60	250	250	57	ETR	1 PALLET	STS-10	258AUN
TDRS-C			A	2270	7.00	2.90	278	35786	28.50	ETR	IUS-2	STS-13	259AUN
MEA-1			A				296	296	28.50	ETR	SPEC STR	STS-8	260AUN
OSTA-2(SEPS)		OSTA	A				278	278	28.50	ETR		STS-7	263AUN
INSAT-1A		IND	A				278	35786	28.50	ETR	SSUS-D	STS-13	267AUN
TDRS-D			A	2270	7.00	2.90	278	35786	28.50	ETR	IUS-2	STS-15	268AUN
SPACELAB-2		OSS	A	15800	18.00	4.60	374	374	50.00	ETR	3 PALLET	STS-14	269AUN
DOD 83-1		DOD	A						28.50	ETR		STS-9	270AUN
RCA-E		RCA	A	944	1.00	1.20	296	35786	28.50	ETR	SSUS-D	STS-8	274AUN
INSAT-1B		IND	A	944	3.00	2.50	278.	35786	28.50	ETR	SSUS-D	STS-15	275AUN
DOD 83-2		DOD	A							ETR		STS-11	277AUN
DOD 83-3		DOD	A							ETR		STS-12	278AUN
TEAL RUBY IR			P	4989	4.00	2.10	741	741	72	WTR			554CTP
CHEM REL MODULE	S-5		A	2700	2.00	3.00	278	1200	57	ETR	UNIQ STA		600STM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
*** 84		***											
PALAPA B2			A				296	296	28.50	ETR	SSUS-D	STS-21	202FAM
MPS-1 MATL PROCESSIN	U-1		A				296	296	28.50	ETR	OFT PALL	STS-17	262STM
SPACELAB-3 LONG MOD			A	15800	10.00	4.60	370	370	57	ETR	1 PALLET	STS-20	272AVN
SYNCOM IV-1 LEASAT			A	1315	4.00	4.10	296	35786	28.50	ETR	UNIQ STA	STS-17	273AVN
MPS-2 MATL PROCESSIN	U-1		A	4780	3.00	4.60	296	296	28.50	ETR	OFT PALL	STS-20	276AVN
TELESAT-G		CAN	A				296	35786	28.50	ETR	SSUS-D	STS-17	279AVN
PALAPA B/1		INDS	A	300.00	3.00	1.90	296	35786	28.50	ETR	SSUS-D	STS-17	280AVN
SPACELAB 4 LIFE SCI.			A				296	296	46.00	ETR	SPEC STR	STS-22	281AVN
ERBS-EARTH RAD BUDGT	E-4	OSTA	A	1134	4.00	2.10	296	700	46.00	ETR	MMS	STS-22	282AVN
RCA-F			A				296	35786	28.50	ETR	SSUS-D	STS-24	283AVN
ARABSAT-A			A				296	35786	28.50	ETR	SSUS-D	STS-24	284AVN
OSS-2		OSS	A				296	296	28.50	ETR	OFT PALL	STS-24	285AVN
AT&T-1			A				296	296	28.50	ETR	SSUS-D	STS-24	286AVN
AMPTE-ACT MAG PART E	S-6		A	770	1.10	3.00	300	7RE	28.50	ETR	SSUS-D	STS-26	287STM
SYNCOM IV-2 LEASAT			A	1315	4.00	4.10	296	35786	28.50	ETR	UNIQ STA	STS-21	288AVN
ST-SPACE TELESCOPE	A-3	OSS	A	11000	13.60	4.30	593	593	28.50	ETR	SPES STR	STS-16	289STM
LDEF	OI-10	OAST	A	4500	9.10	4.30	509	509	28.50	ETR		STS-29	290STM
PALAPA-B/2		INDS	A	3.50	300.00	1.90	296	35786	28.50	ETR	SSUS-D	STS-28	291AVN
AT&T-2			A				296	35786	28.50	ETR	SSUS-D	STS 28	292AVN
ARABSAT-B			A				296	35786	28.50	ETR	SSUS-D	STS-26	293AVN
SYNCOM IV-3 LEASAT		HUGHES	A	1315	6.00	4.20	296	296	28.50	ETR	UNIQ STA	STS 26	294AVN
GALILEO ORBITER	P-1	JPL	A	1800	5.10	4.40	370	4RJ	28.50	ETR	IUS-3	STS-18	295STM
GALILEO PROBE	P-1	JPL	A	260.00		1.30	370	4RJ	28.50	ETR	IUS-3	STS-19	296STM
OSTA-3		OSTA	A				279	279	28.50	ETR	SPEC STR	STS-26	298AVN
INTELSAT-C			A	1940	6.00	2.60	296	35786	28.50	ETR	SSUS-A	STS-20	300AVN
TELESAT-1		CAN	A	1000	2.00	2.10	296	35786	28.50	ETR	SSUS-D	STS-21	301AVN

SATELLITE OPERATIONAL PARAMETERS.

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
RCA-G			A				509	35786	28.50	ETR	SSUS-D	STS-29	302AVN
SPACELAB-D1 BMFT		GER	A				296	295	28.50	ETR	1 PALLET	STS-25	303AVN
LANDSAT D RETRIEVAL	R-2		A	1597	3.00	2.00	705	705	99	WTR	MMS		309AVN
SPACELAB-6(SOLAR TER		OAST	A				389	389	57	ETR	3 PALLET	STS-30	310AVN
DOD 84-1			A							ETR		STS-23	315AVN
OSTA-2(NEA-MAUS)			A				296	296	28.50	ETR	SPEC STR	STS-21	372FAM
NOAA-G	E-5		A	740			296	~~296~~ 230	99	WTR	UNIG STA	1WA	373FAM
DOD 85-1										WTR		1W	374FAM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE * * * 85	SAT. NO.	SPONSOR ORGANIZ. * * *	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORBIT ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
DOD 85-7										ETR		STS-41	001FAM
DOD 85-8										ETR		STS-43	002FAM
GRO-GAMMA RAY OBSEV.	A-7	OSS	P	1100	6.00	4.50	296	400	28.50	ETR	MMS	STS-39	005STM
EUVE-EXT ULTRAVIOLET	A-5	OSS	A	400.00	4.50	2.00	296	550	28.50	ETR	MMS	STS-52	017STM
LDEF RETRIEVAL	OI-10	OAST	A	4500	9.10	4.30	509	509	28.50	ETR		STS-47	033STM
COBE COSMC BKGND EXP	A-4	OSS	A	1431	4.80	4.40	296	900	99	WTR	UNIQ STA	4W	045STM
GRAVSAT A1		OSTA	P	4000	1.00	1.20	296	556	28.50	ETR	SSUS-D	STS-46	066LEP
DEF MET SAT PROG 2		A	A	1030	3.00	1.00	1538	1538	98	WTR			121LEP
DEF MET SAT PROG 7		B	A	11080	3.00	1.00	1538	1538	98	WTR			129LEP
DOD 86-1										WTR		5W	155FAM
NASA FREE FLYER										WTR		6W	195FAM
REFLIGHT OPP												STS-42	196FAM
DOD 85-8										ETR		STS-43	197FAM
ISPM-SOLAR POLAR NAS	A-3		A	683	2.00	3.20	370	1.6AU	28.50	ETR	IUS-3	STS-35	198FAM
DOD 85-9										ETR		STS-44	201FAM
MAGSAT B		OSTA	P	272.00	800	.90	300	300	99	WTR	SSUS-A		219NAS
ISPM-SOLAR POLAR ESA	S-3	ESA JPL	A	683	2.00	3.20	370	1.6AU	28.50	ETR	IUS-3	STS-34	271AVN
SPACELAB-5 ASTROPHYS			A				370	370	57	ETR	4 PALLET	STS-34	299AVN
MPS-3 MATL PROCESSIN	U-1		A				296	296	28.50	ETR	OFT PALL	STS-46	304AVN
SBS-D			A	1000	2.00	3.60	296	35786	28.50	ETR	SSUS-D	STS-46	305AVN
PRC-1 PEOP REP CHINA			A				296	35786	28.50	ETR	SSUS-D	STS-49	306AVN
SYNCOM IV-4 LEASAT			A	1315	4.00	4.10	296	35786	28.50	ETR	UNIQ STA	STS-32	307AVN
OSS-3		OSS	A				296	296	28.50	ETR	OFT PALL	STS-32	312AVN
RCA-H			A				296	35786	28.50	ETR	SSUS-D	STS-32	313AVN
SPACELAB-7 EAR OBSV		OAST	A				370	370	57	ETR	4 PALLET	STS-45	314AVN
SYNCOM IV-5 LEASAT			A	1315	4.00	4.10	296	35786	28.50	ETR	UNIQ STA	STS-39	318AVN

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	SAT. NO.	* * * 85 SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
SPACELAB-8 MATL PROC			A				296	296	28.50	ETR	1 PALLET	STS-30	319AVN
INMARSAT			A	943	1.00	1.20	296	35786	28.50	ETR	SSUS-D		348MDC
AT&T-3			A				296	35786	28.50	ETR	SSUS-D	STS-32	375FAM
INTELSAT-D			A	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A	STS-49	376MDC
INTELSAT V			P	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A		377MDC
DOD 85-3										WTR		2W	387FAM
DOD 85-4										ETR		STS-33	388FAM
INTER COMET MISSION	P-3		P	3800	70.00	6	278	1.5AU	28.50	ETR	IUS/SEPS		390STM
PEP-PWR EXT PKG	U-6		P	950			296	296	28.50	ETR			391STM
DOD 85-6										ETR		STS-37	414FAM
SPACELAB D4 (BMFT)			A				370	370	57	ETR	4 PALLET	STS-40	415FAM
TELESAT-H			A	998	2.00	2.10	296	35786	28.50	ETR	SSUS-D	STS-46	416MDC
OSS-4			A				296	296	99	WTR	OFT PALL	4W	419FAM
OSTA-4			A				TBD	TBD	28.50	ETR	SPEC STR	STS-47	420FAM
DOD 85-5										WTR		3W	421FAM
GRAVSAT A2			A	4000	1.00	1.20	296	556	28.50	ETR	SSUS-D	STS-49	431FAM
SPACELAB 10(LIFE SC)			A				296	296	46.00	ETR	1 PALLET	STS-48	432FAM
SIRE-SPACE IR			A	2487	11.00	3.10	741	741	98	WTR	1 PALLET		553STP
TALON GOLD LASER				6803	9.00	4.60	296	296	28.50	ETR			559STP
CHEM REL MODULE	S-5		A	2700	2.00	3.00	278	1200	57	ETR	UNIQ STA		604STM
LG DEPLOY ANTENNA			P										605STM
DOD 85-2										ETR		STS-31	617FAM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE * * * 86	SAT. NO.	SPONSOR ORGANIZ. * * *	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
ERBS-EARTH RAD BUD-R	E-4	OSTA	A	1500	3.00	2.00	278	600	46.00	ETR	MMS		019LEP
REGION H2O QUAL. MON		OSTA	P	1000	3.50	2.50	278	700	58	ETR			023LEP
SCADM-SOL CYC&DYN		OSS	C	2100	4.60	2.40	296	575	28.50	ETR	MMS		028LEP
UARS-UPPER ATMOS RES	E-7	OSTA	P	3700	4.00	2.00	278	500	56	ETR	MMS		030LEP
GRAVITY PROBE B	A-8	OSS	P	1270	4.20	4.20	296	520	90	WTR	MMS		046LEP
NOSS-NAT. OCEAN SAT	E-6	OSTA	P	4500	9.00	2.70	278	787	87	WTR	UNIQ STA		081LEP
NOSS-NAT. OCEAN SAT	E-8	OSTA	P	4500	3.00	.70	278	787	87	WTR	UNIQ STA		085LEP
SASP-SC & APP SP PLA	U-7	OSTA	P	40000			296	296	28.50	ETR			093STM
DOD 86-5										ETR		STS-55	095FAM
TRANSIT 1			A	164.00	2.10	.46	278	1100	90	WTR			136LEP
TRANSIT 2			A	164.00	2.10	.46	278	1100	90	WTR			137LEP
DOD 86-6										ETR		STS-57	147FAM
DOD 86-7										ETR		STS-59	148FAM
DOD 86-8										ETR		STS-61	149FAM
DOD 86-9										WTR		9W	150FAM
DOD 86-10										ETR		STS-64	151FAM
DOD 86-11										ETR		STS-68	152FAM
NOAA I		OSTA	P	4173	8.00	3.70	278	278		WTR	MMS		154FAM
NOAA H		OSTA	P	4173	8.00	3.70	278	278		WTR	MMS		156FAM
REFLIGHT OPP.										ETR		STS-67	191FAM
REFLIGHT OPP										ETR		STS-63	192FAM
NASA FREE FLYER										WTR		8W	193FAM
EUVE-EXT ULTRAVIOLET	A-5		A	400.00	4.50	2.00	296	550	28.50	ETR	UNIQ STA	STS-52	194FAM
DOD 86-2										ETR		STS-50	204FAM
SPACELAB-16 SOLR PHY			A				370	370	57	ETR	4 PALLET	STS-51	205FAM
HI ENERGY EX		OSS		2268	4.00	4.60	463	463	28.50	ETR			206NAS

SATELLITE OPERATIONAL PARAMETERS.

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
OSS-5			A				296	296	28.50	ETR	OFT PALL	STS-52	209FAM
SPACELAB-13 MATL SCI			A				296	296	28.50	ETR	1 PALLET	STS-54	210FAM
OSS-6			A				296	296	28.50	ETR	OFT PALL	STS-58	212FAM
SPACELAB-9 ASTRPHYS			A				370	370	57	ETR	2 PALLET	STS-60	213FAM
MPS-4			A				296	296	28.50	ETR	OFT PALL	STS-65	214FAM
SPACELAB-11 PLASMA			A							WTR	3 PALLET	10W	216FAM
SPACELAB-15 LIFE SCI			A				296	296	46.00	ETR	1 PALLET	STS-66	217FAM
DOD 86-3										ETR		STS-53	218FAM
DOD 86-4										WTR		7W	220FAM
25 KW PW MOD		OAST	P	13967			435	435	28.50	ETR			222NAS
PRC-2 PEOP REP CHINA			A				296	35786	28.50	ETR	SSUS-D	STS-56	316AVN
GLOBAL DISASTER COMN			P	544	3.00	1.50	296	35786	28.50	ETR	SSUS-D		320MDC
GOES-GEOS OP ENV SAT E-2			A	720			278	35786	28.50	ETR	SSUS		343STM
INMARSAT			A	943	1.00	1.20	296	35786	28.50	ETR	SSUS-D		349MDC
INTELSAT E			A	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A	STS-56	378MDC
INTELSAT F			A	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A	STS-62	379MDC
X-RAY TIME EXP	A-10		A	850	4.00	2.00	300	300	28.50	ETR	UNIQ STA		392STM
VENUS ORBIT IMG RAD	P-2		P	1000	12.00	2.00	296	.72AU	28.50	ETR	IUS-2		393STM
30/20 GHZ ANT TRUNK	C-4		P	1000			296	35786	28.50	ETR	SSUS		394STM
SEPS-SOL ELECT PROP	T-9		P	3400			296	35786	28.50	ETR	IUS		395STM
LG STRUCT CONSTR	U-5		P				296	296	28.50	ETR			396STM
ROMS-P				4082	9.00	3.10	741	741	98	WTR			555STP
SIRTF-IR TELE FAC	A-6		P	2950	8.70	3.10	400	400	45.00	ETR	2 PALLET		606STM
OPEN-ORIG PLASMA ETM	S-7		P	1000	3.50	3.00	296	240ER	28.50	ETR	SSUS-A		607STM
SUBSAT FAC-FREE FLYE	S-9		P	500.00	1.50	1.00	296	296			UNIQ STA		608STM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG M	S/C DIA M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
* * * 87		* * *											
GRO-GAMMA RAY OBS-RE	A-7	OSS	P	11000	6.00	4.50	400	278	28.50	ETR	MMS		006STM
AXAF-ADV X-RAY ASTRO	A-9	OSS	P	10000	11.50	3.10	450	450	28.50	ETR	MMS		010STM
CRO-COSMIC RAY OBSER	A-13	OSS	C	18000	15.00	4.50	400	400	56	ETR	MMS		013STM
ERBS-EARTH RAD BUD	E-4	OSTA	A	1500	3.00	2.60	278	600	46.00	ETR	MMS		020LEP
LDEF RETURN 3	OI-10	OAST	A	4500	9.10	4.30	509	509	28.50	ETR			037LEP
TOPEX-TOPOG EXP	E-9	OSTA	P	272.00	1.00	.90	278	1297	87	WTR	IUS		051LEP
EARTH SURVEY 1		OSTA	P	350.00	1.00	.50	278	1686	99	WTR			054LEP
LANDSAT RETURN 2	R-2	OSTA	A	1547	3.00	2.00	705	278	98	WTR	MMS		060LEP
SOIL MOISTURE	R-8	OSTA	O	408.00	1.00	1.40	278	465	56	ETR	MMS		070LEP
SOLAR PROBE	S-11	OSTA	P	1500	4.40	3.80	296	4RS	28.50	ETR	IUS		095STM
POLAIRE 1		CANADA	P	440.00		.80	300	300	90	WTR			102LEP
ALL WEATHER MICRO 1		CANADA	P	2000		1.30	278	790	85	WTR			104LEP
USAF SP TST PROG 7		DOD	P	1000	1.00	4.00	500	500	28.50	ETR			114LEP
DEF MET SAT RETURN 2		A	A	1080	3.00	1.00	1538	296	98	WTR			122LEP
DEF MET SAT PROG 3		A	A	1080	3.00	1.00	296	1538	98	WTR			123LEP
TRANSIT 3			A	164.00	2.10	.46	278	1100	90	WTR			138LEP
GOES-H GEO ORB ENV S	E-2		A	720			278	35786		ETR	SSUS		153STM
PLASMA TURB EXP	S-10		P							ETR	SSUS		211STM
COASTAL SAT.		OSTA	P	4173	8.00	3.70	296	296	100	WTR	MMS		226NAS
STORMSAT			C	1600	6.00	3.70	296	35786	28.50	ETR	MMS/IUS		321MDC
EARTH OBS/COMMUN 1			C	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A		327MDC
MAP GRAVITY FIELD/CO			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		331MDC
RESOURCES/POLLUTION			C	674	3.00	1.90	296	35786	28.50	ETR	SSUS-D		333MDC
FOR.COMMUN/EARTH OBS			C	943	4.00	2.50	296	35786	28.50	ETR	SSUS-D		353MDC
INMETSAT			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		356MDC
INTELSAT V			P	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A		780MDC

SATELLITE OPERATIONAL PARAMETERS.

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
FOREIGN COMM/SBS			P	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		397MDC
US & FOR. COMMUN 1			C	943	1.00	1.20	296	35786	28.50	ETR	SSUS-D		425MDC
US & FOR. COMMUN 2			C	943	1.00	1.20	296	35786	28.50	ETR	SSUS-D		426MDC
LASS-LG AREA STRUCT			C	2268	1.00	4.60	296	296	28.50	ETR			556STP
MRV HIGH ALT.			C	2268			296	35786		ETR			557STP
STARLAB TELESCOPE	A-11		P	2000	5.00	1.50	300	300.	09.00	ETR	2 PALLET		609STM
SOLAR SOFT X-RAY	S-8		P	1300	6.00	1.20	430	430	57	ETR	1 PALLET		610STM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE * * * 88	SAT. NO.	SPONSOR ORGANIZ. * * *	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
GRO-GAMMA RAY OBSERV	A-7	OSS	P	11000	1.00	4.50	296	400	28.50	ETR	MMS		007STM
VLBI-VERY LG BASE IN	A-15	OSS	P			4.50	400	400	45.00	ETR			026LEP
SPACELAB-PIN HOLE	S-14	OSTA	O	10000	37.00	24	370	370	97	WTR	PALLET		031STM
LDEF 4	OI-10	OAST	A	4500	9.00	4.30	509	509	28.50	ETR			038STM
ATMAS-ADV THERAL MAP	R-6	OSTA	P	1450	2.50	2.00	700	700	98	WTR	MMS		049STM
GL REG ATMOS MON 1		OSTA	O				700	700	98	WTR			052LEP
THERMOSAT 1		OSTA	A	1000			700	700	98	WTR			064LEP
ADV GEO SAT 1		OSTA	C				700	700	98	WTR			063LEP
OP EARTH RES SAT A		OSTA	P	1700	4.30	2.20	700	700	98	WTR	MMS		071LEP
OP EAR RES RETURN A		OSTA	P	1700	4.30	2.20	700	700	98	WTR	MMS		077LEP
NOSS-NAT. OCEAN SAT		OSTA	P	4434	9.00	2.20	800	800	98	WTR			082LEP
THIN ROOT SYS COMM	C-6	OSTA	O	2300	50.00	14	296	35786	28.50	ETR	IUS		099STM
PRIV EARTH RES 1		US INDUS	P	1700	4.30	2.20	700	700	98	WTR			106LEP
USAF SP TST PROG 8		DOD	P	3000	1.00	4.00	500	500	98	WTR			115LEP
DEF MET SAT RETURN 7		B	A	2381	8.50	3.40	830	296	98	WTR			130LEP
DEF MET SAT PROG 8		B	A	2381	8.50	3.40	830	830	98	WTR			131LEP
TRANSIT 4			A	164.00	2.00	.50	278	1100	90	WTR			139LEP
TRANSIT 5			A	164.00	2.00	.50	278	1100	90	WTR			146LEP
RESOURCES/POLLUTION			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		328MDC
RESOURCES/POLLUTION			C	674	3.00	1.90	296	35786	28.50	ETR	SSUS-D		334MDC
EARTH OBS/COMMUN.			C	1310	4.00	2.00	296	35786	28.50	ETR	SSUS-A		339MDC
RESOURCES/POLLUTION			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		340MDC
MAG FIELD SURV B	R-7		P	800			300	300	97	WTR			344STM
30/20 GHZ ANT CUST	C-4		P	1250			296	35786	28.50	ETR	SSUS		346STM
INMETSAT			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		357MDC
INMETSAT 1			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		358MDC

SATELLITE OPERATIONAL PARAMETERS.

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
INTELSAT V 1			C	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A		381MDC
INTELSAT V 2			C	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A		382MDC
FOR. COMM/SBS 1			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		398MDC
FOR. COMM/SBS 2			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		399MDC
FOR. COMM/SBS 3			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		400MDC
FOR. COMM/SBS 4			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		401MDC
US COMMUN. 1			C	1648	6.00	2.50	296	35786	28.50	ETR	SSUS-A		433MDC
US COMMUN. 2			C	1648	6.00	2.50	296	35786	28.50	ETR	SSUS-A		434MDC
US COMMUN. 3			C	1648	6.00	2.50	296	35786	28.50	ETR	SSUS-A		435MDC
US COMMUN. 4			C	1648	6.00	2.50	296	35786	28.50	ETR	SSUS-A		436MDC
US COMMUN. 5			C	1648	6.00	2.50	296	35786	28.50	ETR	SSUS-A		437MDC
SCI.APPLIC.PLATFORM			P	18140			435	435	28.50	ETR			452MDC
LAMAR-LG AREA MOD AR A-14			C	5200	6.00	4.00	278	400	28.50	ETR	HMS		611STM

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SATELLITE OPERATIONAL PARAMETERS-

SATELLITE	* * * 89 SAT. NO.	* * * SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORBIT ORB-KM	INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
ST-SPACE TELESCOPE	A-3	OSS	A	11000	13.60	4.30	600	600	28.50	ETR	SPFC STR		003STM
ENVIRON MONITOR		OSTA	C	1000	3.50	2.50	700	700	57	ETR			024LEP
VLBI-VERY LG BASE IN A-15		OSS	P			4.50	400	400	45.00	ETR			027LEP
SCADM-SOL CYC&DYN R		OSS	C	2100	4.60	2.40	575	575	28.50	ETR	MMS		029LEP
LDEF RETURN 4	OI-10	OAST	A	4500	9.10	4.30	509	509	28.50	ETR			039STM
LDEF 5	OI-10	OAST	A	4500	9.10	4.30	509	509	28.50	ETR			040STM
ICEX-ICE & CLIM EXP		OSTA	P	5000	18.00	4.60	700	700	87	WTR			050LEP
EARTH SURVEY 2		OSTA	P	772	3.00	1.50	910	910	99	WTR			055LEP
OTV-ORBIT XFER VEH D T-10		OSTA	P	4000	1.00	.70	296	35786	28.50	ETR	IUS		062STM
OP EAR RES SAT 2		OSTA	A	1700	4.30	2.20	700	700	98	WTR	MMS		073LEP
OP EAR RES SAT B		OSTA	P	1700	4.30	2.20	700	700	98	WTR	MMS		075LEP
OP EAR RES RETURN B		OSTA	P	1700	4.30	2.20	700	700	98	WTR	MMS		076LEP
NOSS-NAT. OCEAN SAT		OSTA	A	4434	9.00	2.20	800	800	87	WTR	UNIQ STA		083LEP
NOSS-NAT. OCEAN SAT		OSTA	A	4434	9.00	2.20	800	800	87	WTR	UNIQ STA		086LEP
OP METEOROLOGY	E-10	OSTA	P	4500	10.00	4.50	296	800	87	WTR	UNIQ STA		090STM
SATURN ORBIT(DUAL)	P-4	OSTA	P	3000	70.00	5.00	278	9.5AU	28.50	WTR	IUS/SEPS		091STM
SOLAR TERR OBS	S-12	OSTA	C		80.00	9	400	400	57	ETR			092STM
USAF SP TST PROG 9		DOD	P	1000	1.00	4.00	500	500	98	WTR			114LEP
DEF MET SAT RETURN 3		A	A	2381	8.50	3.40	830	296	98	WTR			124LEP
DEF MET SAT PROG 4		A	A	2381	8.50	3.40	830	830	98	WTR			125LEP
TRANSIT 6			A	164.00	2.00	.50	278	1100	90	WTR			140LEP
EARTH OBS/COMMUN.			C	1413	4.00	3.10	296	35786		ETR	IUS-2		325MDC
EARTH OBS/COMMUN.			C	943	4.00	2.50	296	35786	28.50	ETR	SSUS-D		327MDC
RESOURCES/POLLUTION			C	674	3.00	1.90	296	35786	28.50	ETR	SSUS-D		335MDC
RESOURCE/POLLUTION			C	674	3.00	1.90	296	35786	28.50	ETR	SSUS-D		336MDC
ASTRONOMY AF(1)			C	950	1.00	2.40	296	5000		ETR	IUS-2		342MDC

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	* * * 89 SAT. NO.	* * * SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	CRIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
SOIL MOIST ASSMT	R-8		C				296	465			UNIQ STA		345STM
OCEAN RES (SAR)	E-11		C										347STM
MAG FLD SURV B-MAINT	R-7		P	800	1.00	1.20	300	303	97	WTR	SSUS-D		350STM
FOR.COMMUN/EARTH OBS			C	943	4.00	2.50	296	35786	28.50	ETR	SSUS-D		354MDC
INMETSAT 2			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		359MDC
INMETSAT 3			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		360MDC
INMETSAT 4			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		361MDC
INMETSAT 5			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		362MDC
INTELSAT V 1			C	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A		383MDC
INTELSAT V 2			C	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A		384MDC
FOR. COMM/SBS 1			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		402MDC
FOR. COMM/SBS 2			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		403MDC
FOREIGN COMM.			C	636	3.00	1.80	296	35786	28.50	ETR	SSUS-D		424MDC
US COMM&FOR. COMMUN.			C	943	1.00	1.20	296	35786	28.50	ETR	SSUS-D		427MDC
US & FOREIGN COMM. 4			C	943	1.00	1.20	296	35786	28.50	ETR	SSUS-D		428MDC
US COMMUN. 10			C	943	4.00	2.50	296	35786	28.50	ETR	SSUS-D		441MDC
US COMMUN.12			C	943	4.00	2.50	296	35786	28.50	ETR	SSUS-D		443MDC
US COMMUN. 15			C	1453	7.00	2.50	296	35786	28.50	ETR	SSUS-A		444MDC

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
ST SPACE TELESCOPE	A-3	OSS	A	11000	13.60	4.30	593	593	28.50	ETR	SPEC STR		004STM
GRO-GAMMA RAY OBS R	A-7	OSS	A	1100	6.00	4.50	400	296	28.50	ETR	MMS		008STM
AXAF-ADV X-RAY AST R	A-9	OSS	P	10000	11.50	3.10	400	400	28.50	ETR	MMS		011STM
CRO-COSMIC RAY OBS R	A-13	OSS	C	18000	15.00	4.50	400	400	56	ETR	MMS		014STM
LG SOLAR OBSER		OSS	C	9800	16.20	4.60	350	350	28.50	ETR			016LEP
ERBS-EARTH RAD BUD R	E-4	OSTA	A	1500	3.00	2.00	704	278	56	ETR	MMS		021STM
LDEF RETURN 5	OI-10	OAST	A	4500	9.00	4.30	509	509	28.50	ETR			041STM
THERMOSAT-2		OSTA	A	1000			700	700	98	WTR			065LEP
GRAVSAT A,B 2		OSTA	A	2000	2.00	4.00	300	300	90	WTR			067LEP
OP EAR RES RETURN C		OSTA	P	1700	4.30	2.20	700	700	98	WTR	MMS		079LEP
NOSS-NAT. OCEAN SAT		OSTA	A	4434	9.00	2.20	800	800	87	WTR			087LEP
GEO COMM PLAT XFER	C-5	OSTA	P	6560	3.00	1.00	296	35786	28.50	ETR	DTV		096STM
SOC-SP OPS CENTER	U-14		O										097STM
POLAIRE 2		CAN	P	440.00	1.00	2.50	300	300	90	WTR			103LEP
USAF SP TST PROG 10		DOD	P	1000		4.00	500	500	98	WTR			117LEP
DEF MET SAT RETURN 8		B	A	2381	8.50	3.40	830	296	98	WTR			132LEP
DEF MET SAT PROG 9		B	A	2381	8.50	3.40	830	830	98	WTR			133LEP
TRANSIT 7			A	164.00	1.00	.50	278	1100	90	WTR			141LEP
EARTH OBS/COMMUN 1			C	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A		323MDC
RESOURCES/POLLUTION			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		329MDC
RESOURCES/POLLUTION			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		341MDC
INMARSAT			C	943	1.00	1.20	296	35786	28.50	ETR	SSUS-D		351MDC
INMARSAT 1			C	943	1.00	1.20	296	35786	28.50	ETR	SSUS-D		357MDC
INMETSAT 6			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		363MDC
INMETSAT 7			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		364MDC
INMETSAT 8			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		365MDC

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	* * * 90 SAT. NO.	* * * SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
INTELSAT V 1			C	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A		385MDC
INTELSAT V 2			C	1921	6.00	2.50	296	35786	28.50	ETR	SSUS-A		386MDC
FOREIGN COMM/SBS 1			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		404MDC
FOREIGN COMM/SBS 2			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		405MDC
FOREIGN COMM/SBS 3			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		406MDC
FOREIGN COMM/SBS 4			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		407MDC
FOREIGN COMM/SBS 5			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		408MDC
US & FOREIGN COMM. 5			C	943	1.00	1.20	296	35786	28.50	ETR	SSUS-D		429MDC
US COMMUN. 6			C	1648	6.00	2.50	296	35786	28.50	ETR	SSUS-A		438MDC
US COMMUN. 7			C	1648	6.00	2.50	296	35786	28.50	ETR	SSUS-A		439MDC
US COMMUN. 8			C	1648	6.00	2.50	296	35786	28.50	ETR	SSUS-A		440MDC
US COMMUN.11			C	943	4.00	2.50	296	35786	28.50	ETR	SSUS-D		447MDC
FOREIGN COMMUN 1			C	428.00	2.00	1.20	296	35786	28.50	ETR	SSUS-D		445MDC
GEO COMM PLAT STRUCT C-5			P	6500			296	296	28.50	ETR			450STM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE * * * 91	SAT. NO.	SPONSOR ORGANIZ. * * *	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORBIT ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
GRO-GAMMA RAY OBSERV	A-7	OSS	A	1100	6.00	4.50	296	400	28.50	ETR	MMS		009STM
AXAF-ADV X-RAY AST	A-9	OSS	P	10000	11.50	3.10	278	400	28.50	ETR	MMS		012STM
CRO-COSMIC RAY OBS	A-13	OSS	C	18000	15.00	4.50	278	400	56	ETR	MMS		015STM
ERBS-EARTH RAD BUD S	E-4	OSTA	A	1500	3.00	2.00	704	704	56	ETR	MMS		022STM
ENVIRON MONITOR 1		OSTA	C	1000	3.50	2.50	700	700	58	ETR			025LEP
LDEF 6	OI-10	OAST	A	4500	9.00	4.30	509	509	28.50	ETR			042STM
ADVANCED RELATIVITY		OSS	C	910	3.60	2.20	520	520	90	WTR			047LEP
ADVANCED RELATIVIT 1		OSS	C	910	3.60	2.20	520	520	90	WTR			048LEP
EARTH SURVEY 3		OSTA	P	772	3.00	1.50	296	910	99	WTR			056LEP
OP EAR RES SAT B2		OSTA	[illegible]	771	3.00	1.50	296	910	98	WTR			077LEP
SCADM SOL CYLIDYN	S-13	OSTA	C	2600	6.00	2.00	278	575	28.50	ETR	MMS	STS-31	094STM
UNP PROG-URAN NEP PL	P-6	OSTA	C				296	49AU	98	WTR			098STM
ALL WEATHER MICRO 2		CAN	P	1000	1.00	4.00	500	500	85	WTR			105LEP
USAF SP TST PROG 11		DOD	P	1000	1.00	4.00	500	500	98	WTR			118LEP
DEF MET SAT RETURN 4		A	A	2381	8.50	3.40	830	830	98	WTR			124LEP
DEF MET SAT PROG 5		A	A	2381	8.50	3.40	830	830	98	WTR			127LEP
TRANSIT 8			A	164.00	2.10	.50	278	1100	90	WTR			145LEP
RESOURCES/POLLUTION			C	515	1.00	1.40	296	35786	28.50	ETR	SSUS-D		330MDD
MAP GRAVITY FIELD/CO			C	515	1.00	1.40	296	35786	28.50	ETR	SSUS-D		332MDT
RESOURCES/POLLUTION			C	674	3.00	1.90	296	35786	28.50	ETR	SSUS-D		337MDD
RESOUR POLLUTION			C	674	3.00	1.90	296	35786	28.50	ETR	SSUS-D		338MDT
FOR.COMMUN/EARTH OBS			C	943	4.00	2.50	296	35786	28.50	ETR	SSUS-D		355MDD
INMETSAT 9			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		36[illegible]MDD
INMETSAT 10			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		367MDD
INMETSAT 11			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		368MDD
INMETSAT 12			C	943	3.00	2.50	296	35786	28.50	ETR	SSUS-D		3[illegible]MDD

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	* * * 91 SAT. NO.	* * * SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
FOREIGN COMM/EAR.OBS			C	666	3.00	1.90	296	35786	28.50	ETR	SSUS-D		370MDC
FOR.COMM/EARTH OBS.			C	666	3.00	2.50	296	35786	28.50	ETR	SSUS-D		371MDC
FOREIGN COMM/SBS 1			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		409MDC
FOREIGN COMM/SBS 2			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		410MDC
FOREIGN COMM/SBS 3			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		411MDC
FOREIGN COMM/SBS 4			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		412MDC
FOREIGN COMM/SBS 5			C	615	1.00	1.40	296	35786	28.50	ETR	SSUS-D		413MDC
US & FOREIGN COMM. 6			C	943	1.00	1.20	296	35786	28.50	ETR	SSUS-D		430MDC
ELECTRONIC MAIL			O	2721						ETR			449MDC
MAG FIELD SURV B MAI R-7			C	800			300	300	97	WTR			614STM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
* * * 92		* * *											
LDEF RETURN 6	DI-10	DAST	A	4500	9.00	4.30	509	509	28.50	ETR			043STM
GL REG ATMOS MON 2		OSTA	P				700	700	98	WTR			053LEP
UNP PROG-URAN NEP PL	P-6		C				296	49AU					063STM
ADV GEO SAT 2		OSTA	A	2000			296	35786	98	WTR			069LEP
OP EAR RES RETURN 2		OSTA	A	771	3.00	1.50	910	296	98	WTR			074LEP
OP EAR RES SAT C2		OSTA	P	771	3.00	1.50	296	910	98	WTR			080LEP
NOSS-NAT. OCEAN SAT		OSTA	A	4434	9.00	2.20	800	800	98	WTR			084LEP
OP METEOR RETRVL	E-10	OSTA	C	4500	10.00	4.50	800	296	87	WTR	UNIQ STA		100STM
MANNED GEO SORTIE	T-12	OSTA	C	6000			370	35786	28.50	ETR			101STM
PRI EARTH RES 2		US INDUS	P	1771	4.30	2.20	700	700	98	WTR			107LEP
DEF MET SAT RETURN 9		B	A	2381	8.50	3.40	830	830	98	WTR			134LEP
DEF MET SAT PROG 10		B	A	2381	8.50	3.40	830	830	98	WTR			135LEP
TRANSIT 9			A	164.00	2.10	.50	296	1100	90	WTR			143LEP
TRANSIT 10			A	164.00	2.10	.50	296	1100	90	WTR			144LEP
PERSONAL COMM. DEMO			D	7256						ETR			446MDC
SOLAR PWR SYS.TST.			D	136050						ETR			455MDC
SUBMILLIM TELE	A-16		C	1000		4.50	278	1000			UNIQ STA		612STM
AMBIENT IR TELE	A-17		C	16000		4.50	500	500	28.50	ETR			613STM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE *** 93	SAT. NO.	SPONSOR ORGANIZ. ***	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
EDUCATIONAL TV			O	4535						ETR			448MDC
IR INTERFEROMETER	A-18		O	22500	100.00	20	400	400	28.50	ETR			617STM
UNP PROG-URAN NEP PL	P-6		C										618STM
ASTEROID MULT RENDZ	P-7		O	2000	35.00	8	278		28.50	ETR	IUS/SEPS		619STM
LUNAR POLAR ORB	P-8		O	300.00	6.00	4.00	278	400000	28.50	ETR	SSUS-D		620STM
NR EARTH ASTER SAMPL	P-11		O	4000	70.00	5.00	278		28.50	ETR	IUS/SEPS		621STM
MAG FIELD SURV B RET	R-7		P	800			300	300	97	WTR			622STM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	* * * 94 SAT. NO.	* * * SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
OP EAR RES SAT C		OSTA	P	771	3.00	1.50	296	910	98	WTR			078LEP
NUCL.WST.DISP.		DOD	O	10431						ETR			454MDC
GRAV WAVE INTERFEROM	A-19		O	16000	2000	100			28.50	ETR			623STM
MARS ADVANCED TECH	P-5		P	7900	6.00	4.50	278	.5AU	28.50	ETR	IUS		624STM
UNP PROG-URAN NEP PL	A-6		C										625STM
LUNAR LAND SAMP-RET	P-15		O										626STM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
*** 95		***											
PERSONAL COMM. ADV.			0	24489						ETR			447MDC
ORB.DP.SP.RLY.STAT.			0	8617						ETR			453MDC
MOD.SERV.MISSION			0	6803						ETR			456MDC
AUTO PLANET STAT-RES	P-14		0	25000	80.00	15	400	400	28.50	ETR			615STM
MERC ORBIT & LAND	P-7		0	500.00			276	.4AU	28.50	ETR	SEPS		627STM
AUTO PLANET STATION	P-14		0	25000	80.00	15	400	400	28.50	ETR			628STM
GANYMEDE LANDER	P-16		0				278	5.2AU	28.50	ETR	IUS		629STM
CLOSE SOLAR ORBITER	S-15		0				278	.3AU	28.50	ETR	IUS		630STM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE *** 96	SAT. NO.	SPONSOR ORGANIZ. ***	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
ODSRS-ORB DEP SP REL	C-8		0	4300			278	278	28.50	ETR			631STM
ODSRS-ORB DEP SP REL	C-8		0	4300			278	278	28.50	ETR			632STM
ODSRS-ORB DEP SP OTV	C-8		0	4000			278	35786	28.50	ETR			633STM
COSMIC-CON OPT MOD I	A-20		0	67000			500	35786	28.50	ETR	HLV/OTV		634STM
MARS ADV TECH(RETURN	P-5		P				1.5AU	278	28.50	ETR			635STM
NR EARTH ASTER(RETUR	P-11		0	150.00			40AU	278	28.50	ETR	SEPS		636STM
AUTO PLANET STATION-	P-14		0	25000	80.00	15	400	400	28.50	ETR			637STM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
	* * * 97	* * *											
LG OPT UV TELESCOPE	A-21		0	22800	28.50	8	450	450	28.50	ETR			638STM
COMET SAMPLE RETURN	P-10		0	3500	70.00	5.00	278		28.50	ETR	IUS/SEPS		639STM
VENUS LANDER	P-12		0	550	2.00	1.00	278	.72AU	28.50	ETR	IUS		640STM
AUTO MOBILE LUNAR SU	P-13		0	500.00	1.50	1.00	278	400000	28.50	ETR	IUS		641STM

SATELLITE OPERATIONAL PARAMETERS.

SATELLITE	* * * 9E SAT. NO.	* * * SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORBIT ORB-KM	INCL	LAUNCH SITE	CARRIER	MANIF NUMBER	FILE NUMBER
GEOSTAT.COMM.PLAT.FC				8617						ETR			451MDC
100 M THIN APER TELE	A-22		0	85000			500	35786	28.50	ETR			616STM

APPENDIX B
ASSESSMENT
OF SATELLITE
SERVICE NEEDS

APPENDIX B

ASSESSMENT OF SATELLITE SERVICE NEEDS

Appendix B provides an assessment of the service needs for each of the satellites/payloads in the Satellite User Model (SUM). The satellite/payload entries in the SUM were evaluated with respect to the applicability of each top level service function. The service functions were:

- Deployment
- Examination
- Retrieval
- Support - Checkout/Repair
- Support - Maintenance
- Support - Resupply
- Support - Reconfiguration
- Earth Return.

Satellite/payload listings are presented on pages B2 through B27 and applicable service functions are identified. Appropriate acronyms are:

A - Service function approved based on satellites/payloads known to be requesting the service function

Y - Service function assumed beneficial to the satellite user by the SSSAS study team

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SERVICE FUNCTIONS

SATELLITE	* * * 01 CATE GORY	DEPL	* * * EXAM	RETVL	SUPPORT C/O	SUPPORT R?R	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	FART RETR	CNTM SENS	FILE NUMBER
IRAS-IR ASTRO SAT-R	A		Y	Y						A	YES	044STM
IECM-IND ENV CONTAM	A	A	A							A		203FAM
IECM-IND ENV CONTAM	A	A	A							A		208FAM
FILE-FEAT IDENT LAND	A		A							A		223FAM
IECM-IND ENV CONTAM	A	A	A							A		225FAM
PDRS TEST ART.	A	A	A							A		227FAM

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SERVICE FUNCTIONS

SATELLITE	* * * 02 CATE GORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
SMM-SOLAR MAX RETURN	A		A	A						A	---	119STM
IECM,GAS TEST ARTICL	A	A	A							A		220FAM
TDRS-A	A	A	Y	Y	Y					A	---	250STM
INTELSAT F5	A	A	Y	Y	Y					A	---	251AVN
TELESAT E	A	A	Y	Y	Y					A	---	252AVN
SPAS-01 STS PALL SAT	A	A	Y	Y	Y					A	YES	257AVN
DOD 82-1	A										---	261AVN
SBS-C	A	A	Y	Y	Y					A	---	264AVN

SERVICE FUNCTIONS

SATELLITE	* * * 83 CATE GORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
LANDSAT P	A	A	A	A	A	A	A	A	A	YES		061STM
DEF MET SAT PROG 1	A	A	Y	Y	Y	Y	Y	Y	A	YES		120LEP
SBS-B	A	A	Y	Y	Y				R	---		253AVN
TDRS-B	A	A	Y	Y	Y				A	---		254AVN
INTELSAT B(F-6)	A	A	Y	Y	Y				R	---		255AVN
TELSAT F	A	A	Y	Y	Y				A	---		256AVN
SPACELAB-1 LONG MOD	A		Y		Y	Y	Y	Y	A	---		258AVN
TDRS-C	A	A	Y	Y	Y				A	---		259AVN
MEA-1	A		Y		Y	Y	Y	Y	A	---		260AVN
OSTA-2(SEPS)	A		Y		Y	Y	Y	Y	A	---		263AVN
INSAT-1A	A	A	Y	Y	Y				A	---		267AVN
TDRS-D	A	A	Y	Y	Y				A	---		268AVN
SPACELAB-2	A		Y		Y	Y	Y	Y	A	---		269AVN
DOD 83-1	A									---		270AVN
RCA-E	A	A	Y	Y	Y				A	---		274AVN
INSAT-1B	A	A	Y	Y	Y				A	---		275AVN
DOD 83-2	A									---		277AVN
DOD 83-3	A									---		278AVN
TEAL RUBY IR	P	A	Y	Y	Y	Y	Y	Y	A	YES		554STP
CHEM REL MODULE	A	A	Y	Y	Y	Y	Y	Y	A			506STM

SERVICE FUNCTIONS

SATELLITE	* * * 84 CATE GORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	FART RETR	CNTM SENS	FILE NUMBER
PALAPA B2	A	A	Y	Y	Y					A		207FAM
MPS-1 MATL PROCESSIN	A		Y		Y	Y	Y	Y		A	---	262STM
SPACELAB-3 LONG MOD	A		Y		Y	Y	Y	Y		A	---	272AVN
SYNCOM IV-1 LEASAT	A	A	Y	Y	Y					A	---	273AVN
MPS-2 MATL PROCESSIN	A		Y		Y	Y	Y	Y		A	---	276AVN
TELESAT-G	A	A	Y	Y	Y					A	---	279AVN
PALAPA B/1	A	A	Y	Y	Y					A	---	280AVN
SPACELAB 4 LIFE SCI.	A		Y		Y	Y	Y	Y		A	---	281AVN
ERBS-EARTH RAD BUDGT	A	A	A	A	A	A	A	A		A	YES	282AVN
RCA-F	A	A	Y	Y	Y					A	---	283AVN
ARABSAT-A	A	A	Y	Y	Y					A	---	284AVN
OSS-2	A		Y		Y	Y	Y	Y		A	---	285AVN
AT&T-1	A	A	Y	Y	Y					A	---	286AVN
AMPTE-ACT MAG PART E	A	A	Y	Y	Y					A	---	287STM
SYNCOM IV-2 LEASAT	A	A	Y	Y	Y					A	---	288AVN
ST-SPACE TELESCOPE	A	A	A	A	A	A	A	A		A	YES	289STM
LDEF	A	A	A	A	A	Y	Y	Y		A	YES	290STM
PALAPA-B/2	A	A	Y	Y	Y					A	---	291AVN
AT&T-2	A	A	Y	Y	Y					A	---	292AVN
ARABSAT-B	A	A	Y	Y	Y					A	---	293AVN
SYNCOM IV-3 LEASAT	A	A	Y	Y	Y					A	---	294AVN
GALILEO ORBITER	A	A	Y	Y	Y					A	---	295STM
GALILEO PROBE	A	A	Y	Y	Y					A	---	296STM
OSTA-3	A		Y		Y	Y	Y	Y		A	---	298AVN
INTELSAT-C	A	A	Y	Y	Y					A	---	300AVN
TELESAT-1	A	A	Y	Y	Y					A	---	301AVN

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SERVICE FUNCTIONS

SATELLITE	* * * 84 CATEGORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
RCA-G	A	A	Y	Y	Y				A	---	302AVN
SPACELAB-D1 BMFT	A		Y		Y				A	---	303AVN
LANDSAT D RETRIEVAL	A		Y	A	Y				A	---	309AVN
SPACELAB-6(SOLAR TER	A		Y		Y	Y	Y	Y	A	YES	310AVN
DOD 84-1	A									---	315AVN
OSTA-2(MEA MAUS)	A		Y		Y	Y	Y	Y	A		372FAM
NOAA-G	A	A	Y	Y	Y	Y	Y	Y	A	YES	373FAM
DOD 85-1											374FAM

SERVICE FUNCTIONS

SATELLITE	* * * 85 CATE GORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
DOD 85-7											001FAM
DOD 85-8											002FAM
GRO-GAMMA RAY OBSEV.	P	A	A	A	A	A	A	A	A	---	005STM
EUVE-EXT ULTRAVIOLET	A	A	A	A	A	A	A	A	A	YES	017STM
LDEF RETRIEVAL	A		Y	A					A	YES	033STM
CODE COSMC BKGND EXP	A	A	Y	Y	Y	Y	Y	Y	A	---	045STM
GRAVSAT A1	P	A	Y	Y	Y				A	---	066LEP
DEF MET SAT PROG 2	A	Y	Y	Y	Y	Y	Y	Y	Y	---	121LEP
DEF MET SAT PROG 7	A	Y	Y	Y	Y	Y	Y	Y	Y	YES	129LEP
DOD 86-1											155FAM
NASA FREE FLYER											195FAM
REFLIGHT OPP											196FAM
DOD 85-8											197FAM
ISPM-SOLAR POLAR NAS	A	A	Y	Y	Y				A		198FAM
DOD 85-9											201FAM
MAGSAT B	P	A	Y	Y	Y				Y	---	219NAS
ISPM-SOLAR POLAR ESA	A	A	Y	Y	Y				A	---	271AVN
SPACELAB-5 ASTROPHYS	A		Y		Y	Y	Y	Y	A	YES	299AVN
MPS-3 MATL PROCESSIN	A		Y		Y	Y	Y	Y	A	---	304AVN
SBS-D	A	A	Y	Y	Y				A	---	305AVN
PRC-1 PEOP REP CHINA	A	A	Y	Y	Y				A	---	306AVN
SYNCOM IV-4 LEASAT	A	A	Y	Y	Y				A	---	307AVN
OSS-3	A		Y		Y	Y	Y	Y	A	---	312AVN
RCA-H	A	A	Y	Y	Y				A	---	313AVN
SPACELAR-7 EAR OBSV	A		Y		Y	Y	Y	Y	A	YES	314AVN
SYNCOM IV-5 LEASAT	A		Y	Y	Y				A	---	318AVN

SERVICE FUNCTIONS

SATELLITE	* * * 85 CATEGORY	DEPL	* * * EXAM	RETVL	SUPPORT C/O RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
SPACELAB-8 MATL PROC	A		Y		Y	Y	Y	Y	A	---	319AVN
INMARSAT	A	A	Y	Y	Y				A		348MDC
AT&T-3	A	A	Y	Y	Y				A		375FAM
INTELSAT-D	A	A	Y	Y	Y				A		376MDC
INTELSAT V	P	A	Y	Y	Y				A		377MDC
DOD 85-3											387FAM
DOD 85-4											388FAM
INTER COMET MISSION	P	A	Y	Y	Y				A		390STM
PEP-PWR EXT PKG	P	A	Y	Y	Y	Y	Y	Y	A		391STM
DOD 85-6											414FAM
SPACELAB D4 (DNFT)	A		Y		Y	Y	Y	Y	A		415FAM
TELESAT-H	A	A	Y	Y	Y				A		416MDC
OSS-4	A										419FAM
OSTA-4	A										420FAM
DOD 85-5											421FAM
GRAVSAT A2	A	A	Y	Y	Y				A		431FAM
SPACELAB 10(LIFE SC)	A	Y	Y	Y	Y				A		432FAM
SIRC-SPACE IR	A		Y		Y				A		553STP
TALON GOLD LASER					Y				A		558STP
CHEM REL MODULE	A	Y	Y		Y	Y	Y	Y	A		604STM
LG DEPLOY ANTENNA	P	A	Y	Y	Y				A		605STM
DOD 85-2											613FAM

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SERVICE FUNCTIONS

SATELLITE	* * * 86 CATEGORY	CATE DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
ERBS-EARTH RAD BUD-R	A	A	A	A	A	A	A	A	A	A	YES	019LEP
REGION H2O QUAL. MON	P	A	Y	Y	Y					A	YES	023LEP
SCADM-SOL CYCEDY	C	A	A	A	A	A	A	A	A	A	---	028LEP
UARS-UPPER ATMOS RES	P	A	A	A	A	A	A	A	A	A	---	030LEP
GRAVITY PROBE B	P	A	A	A	A	A	A	A	A	A	---	046LEP
NOSS-NAT. OCEAN SAT	P	A	Y	Y	Y					A	YES	081LEP
NOSS-NAT. OCEAN SAT	P	A	Y	Y	Y					A	YES	085LEP
SASP-SC 1 APP SP PLA	P	A	A	A	A	A	A	A	A	A	YES	093STM
DOD 86-5					Y							095FAM
TRANSIT 1		A								A	---	136LEP
TRANSIT 2		A									---	137LEP
DOD 86-6												147FAM
DOD 86-7												148FAM
DOD 86-8												149FAM
DOD 86-9												150FAM
DOD 86-10												151FAM
DOD 86-11												152FAM
NOAA I		P	A	A	A	A	A	A	A	A	YES	154FAM
NOAA II		P	A	A	A	A	A	A	A	A	YES	156FAM
REFLIGHT OPP.												191FAM
REFLIGHT OPP												192FAM
NASA FREE FLYER												193FAM
EUVE-EXT ULTRAVIOLET	A	A	Y	Y	Y							194FAM
DOD 86-2										A		204FAM
SPACELAB-16 SOLR PHY	A			Y		Y	Y	Y	Y			205FAM
HI ENERGY EX										A	---	206NAS

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SERVICE FUNCTIONS

SATELLITE	CATE GORY	DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
*** 86 ***												
DSS-5	A											209FAM
SPACELAB-13 MATL SCI	A		Y		Y	Y	Y	Y	A			210FAM
DSS-6	A											212FAM
SPACELAB-9 ASTRPHYS	A		Y		Y	Y	Y	Y	A			213FAM
MPS-4	A		Y		Y	Y	Y	Y	A			214FAM
SPACELAB-11 PLASMA	A		Y		Y	Y	Y	Y	A			216FAM
SPACELAB-15 LIFE SCI	A		Y		Y	Y	Y	Y	A			217FAM
DOD 86-3												218FAM
DOD 86-4												220FAM
25 KW PW MOD	P	A	A	A	A	A	A	A	A		---	222NAS
PRC-2 PEOP REP CHINA	A	A	Y	Y	Y				A		---	316AVN
GLOBAL DISASTER COMN	P	A	Y	Y	Y				A			320MDC
GOES-GEOS OP ENV SAT	A	A	Y	Y	Y				A		YES	343STM
INMARSAT	A	A	Y	Y	Y				A			349MDC
INTELSAT E	A	A	Y	Y	Y				A			378MDC
INTELSAT F	A	A	Y	Y	Y				A			379MDC
X-RAY TIME EXP	A	A	Y	Y	Y				A			392STM
VENUS ORBIT IMG RAD	P	A	Y	Y	Y				A			393STM
30/20 GHZ ANT TRUNK	P	A	Y	Y	Y				A			394STM
SEPS-SOL ELECT PROP	P	A	Y	Y	Y				A			395STM
LG STRUCT CONSTR	P	A	A	A	A	A	A	A	A			396STM
ROMS-P												555STP
SIRTF-IR TELE FAC	P	A	Y		Y	Y	Y	Y	A		YES	606STM
OPEN-ORIG PLASMA ETH	P	A	Y	Y	Y				A			607STM
SUBSAT FAC-FREE FLYE	P	A	Y	A	Y				A			608STM

SERVICE FUNCTIONS

SATELLITE	CATE GORY	* * * 87 DEPL	EXAM	RETVL	SUPPORT C/O RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
GRO-GAMMA RAY OBS-RE	P	A	A	A	A	A	A	A	A	---	006STM
AXAF-ADV X-RAY ASTRO	P	A	A	A	A	A	A	A	A	YES	010STM
CRO-COSMIC RAY OBSER	C	A	A	A	A	A	A	A	A	---	013STM
ERBS-EARTH RAD BUD	A	A	A	A	A	A	A	A	A	YES	020LEP
LDEF RETURN 3	A		A	A					A	YES	037LEP
TOPEX-TOPOG EXP	P	A	Y	Y	Y				A	YES	051LEP
EARTH SURVEY 1	P	A	Y	Y	Y				A	YES	054LEP
LANDSAT RETURN 2	A		Y	A					A	YES	060LEP
SOIL MOISTURE	O	Y	Y	Y	Y	Y	Y	Y	Y	---	070LEP
SOLAR PROBE	P	A	Y	Y	Y				A	YES	075STM
POLAIRE 1	P	A	Y	Y	Y				A	---	102LEP
ALL WEATHER MICRO 1	P	A	Y	Y	Y				A	---	104LEP
USAF SP TST PROG 7	P				Y				Y	---	114LEP
DEF MET SAT RETURN 2	A						Y	Y	Y	YES	122LEP
DEF MET SAT PROG 3	A				Y				Y	YES	123LEP
TRANSIT 3	A				Y				Y	---	138LEP
GOES-H GEO ORB ENV S	A	A	Y	Y	Y				A	YES	153STM
PLASMA TURB EXP	P	A	Y	Y	Y					---	211STM
COASTAL SAT.	P	A	A	A	A	A	A	A	A	YES	226NAS
STORMSAT	C	A	A	A	A	A	A	A	A	YES	321MDC
EARTH OBS/COMMUN 1	C	A	Y	Y	Y				A	YES	322MDC
MAP GRAVITY FIELD/CO	C	A	Y	Y	Y				A		331MDC
RESOURCES/POLLUTION	C	A	Y	Y	Y				A	YES	333MDC
FOR.COMMUN/EARTH OBS	C	A	Y	Y	Y				A		353MDC
INMETSAT	C	A	Y	Y	Y				A		356MDC
INTELSAT V	P	A	Y	Y	Y				A		380MDC

SERVICE FUNCTIONS

SATELLITE	* * * 87 CATE GORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
FOREIGN COMM/SBS	P	A	Y	Y	Y				A		397MDC
US & FOR. COMMUN 1	C	A	Y	Y	Y				A		425MDC
US & FOR. COMMUN 2	C	A	Y	Y	Y				A		426MDC
LASS-LG AREA STRUCT	C	A	Y	Y	Y	Y	Y	Y	A		556STP
MRV HIGH ALT.	C	A	Y	Y	Y				A		557STP
STARLAB TELESCOPE	P		Y		Y	Y	Y	Y	A	YES	609STM
SOLAR SOFT X-RAY	P		Y		Y	Y	Y	Y	A		610STM

SERVICE FUNCTIONS

SATELLITE *** 08	CATE GORY	*** DEPL	EXAM	RETVL	SUPPORT C/O RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
GRO-GAMMA RAY OBSERV	P	A	A	A	A	A	A	A	A	---	007STM
VLBI-VERY LG BASE IN	P	A	Y	Y	Y	Y	Y	Y	A	---	026LEP
SPACELAB-PIN HOLE	O		Y		Y	Y	Y	Y	A	YES	031STM
LDEF 4	A	A	A	A	A	A	A	A	A	YES	038STM
ATMAS-ADV THERAL MAP	P	A	A	A	A	A	A	A	A	YES	049STM
GL REG ATMOS MON 1	O	Y	Y	Y	Y				A	YES	052LEP
THERMOSAT 1	A	A	Y	Y	Y				A	YES	064LEP
ADV GEO SAT 1	C	A	Y	Y	Y				A	YES	068LEP
OP EARTH RES SAT A	P	A	A	A	A	A	A	A	A	YES	071LEP
OP EAR RES RETURN A	P		A	A					A	YES	072LEP
NOSS-NAT. OCEAN SAT	P	A	Y	Y	Y				A	YES	082LEP
THIN ROOT SYS COMM	O	Y	Y	Y	Y				A	YES	099STM
PRIV EARTH RES 1	P	A	Y	Y	Y				A	YES	106LEP
USAF SP TST PROG 8	P				Y				Y	---	115LEP
DEF MET SAT RETURN 7	A								Y	YES	130LEP
DEF MET SAT PROG 8	A				Y	Y			Y	YES	131LEP
TRANSIT 4	A				Y	Y			Y	---	139LEP
TRANSIT 5	A				Y	Y				- -	146LEP
RESOURCES/POLLUTION	C	A	Y	Y	Y				A	YES	320MDC
RESOURCES/POLLUTION	C	A	Y	Y	Y				A	YES	334MDC
EARTH OBS/COMMUN.	C	A	Y	Y	Y				A	YES	339MDC
RESOURCES/POLLUTION	C	A	Y	Y	Y				A	YES	340MDC
MAG FIELD SURV B	P	A	Y	Y	Y				A	YES	344STM
30/20 GHZ ANT CUST	P	A	Y	Y	Y				A		346STM
INMETSAT	C	A	Y	Y	Y				A		357MDC
INMETSAT 1	C	A	Y	Y	Y				A		358MDC

SERVICE FUNCTIONS

SATELLITE	* * * 08 CATE GORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
INTELSAT V 1	C	A	Y	Y	Y					A		381MDC
INTELSAT V 2	C	A	Y	Y	Y					A		382MDC
FOR. COMM/SBS 1	C	A	Y	Y	Y					A		398MDC
FOR. COMM/SBS 2	C	A	Y	Y	Y					A		399MDC
FOR. COMM/SBS 3	C	A	Y	Y	Y					A		400MDC
FOR. COMM/SBS 4	C	A	Y	Y	Y					A		401MDC
US COMMUN. 1	C	A	Y	Y	Y					A		433MDC
US COMMUN. 2	C	A	Y	Y	Y					A		434MDC
US COMMUN. 3	C	A	Y	Y	Y					A		435MDC
US COMMUN. 4	C	A	Y	Y	Y					A		436MDC
US COMMUN. 5	C	A	Y	Y	Y					A		437MDC
SCI.APPLIC.PLATFORM	P	A	A	A	A	A	A	A	A	A	YES	452MDC
LAMAR-LG AREA MOD AR	C	A	A	A	A	A	A	A	A	A		611STM

SERVICE FUNCTIONS

SATELLITE	CATE GORY	* * * 89 DEPL	EXAM	RETVL	SUPPORT C/O RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
ST-SPACE TELESCOPE	A	A	A	A	A	A	A	A	A	YES	003STM
ENVIRON MONITOR	C	A	Y	Y	Y				A	YES	024LEP
VLBI-VERY LG BASE IN	P	A	Y	Y	Y				A	---	027LEP
SCADM-SOL CYC&DYN R	C	A	A	A	A	A	A	A	A	---	029LEP
LDEF RETURN 4	A		A	A					A	YES	039STM
LDEF 5	A	A	A	A	A	A	A	A	A	YES	040STM
ICEX-ICE & CLIM EXP	P	A	A	A	A				A	YES	050LEP
EARTH SURVEY 2	P	A	A	A	A				A	YES	055LEP
OTV-ORBIT XFER VEH D	P	A	Y	A	A	Y	Y	Y	A	YES	062STM
OP EAR RES SAT 2	A	A	A	A	A	A	A	A	A	YES	073LEP
OP EAR RES SAT B	P	A	A	A	A	A	A	A	A	YES	075LEP
OP EAR RES RETURN B	P		A	A					A	YES	076LEP
NOSS-NAT. OCEAN SAT	A	A	Y	Y	Y				A	YES	083LEP
NOSS-NAT. OCEAN SAT	A	A	Y	Y	Y				A	YES	086LEP
OP METEOROLOGY	P	A	Y	Y	Y				A	YES	090STM
SATURN ORBIT(DUAL)	P	A	Y	Y	Y				A	YES	091STM
SOLAR TERR OBS	C	A	Y	Y	Y				A	YES	092STM
USAF SP TST PROG 9	P				Y				Y	---	116LEP
DEF MET SAT RETURN 3	A				Y				Y	YES	124LEP
DEF MET SAT PROG 4	A				Y				Y	YES	125LEP
TRANSIT 6	A				Y				Y	---	140LEP
EARTH OBS/COMMUN.	C	A	Y	Y	Y				A	YES	325MDC
EARTH OBS/COMMUN.	C	A	Y	Y	Y				A	YES	327MDC
RESOURCES/POLLUTION	C	A	Y	Y	Y				A	YES	335MDC
RESOURCE/POLLUTION	C	A	Y	Y	Y				A	YES	336MDC
ASTRONOMY AF(1)					Y				Y	YES	342MDC

SERVICE FUNCTIONS

SATELLITE	CATE GORY	* * * 89 DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	* * * EART RETR	CNTM SENS	FILE NUMBER
SOIL MOIST ASSMT	C	A	Y	Y	Y					A	YES	345STM
OCEAN RES (SAR)	C	A	Y	Y	Y					A		347STM
MAG FLD SURV R-MAINT	P		Y	Y	Y					A		350STM
FOR.COMMUN/EARTH OBS	C	A	Y	Y	Y					A		354MDC
INMETSAT 2	C	A	Y	Y	Y					A		359MDC
INMETSAT 3	C	A	Y	Y	Y					A		360MDC
INMETSAT 4	C	A	Y	Y	Y					A		361MDC
INMETSAT 5	C	A	Y	Y	Y					A		362MDC
INTELSAT V 1	C	A	Y	Y	Y					A		383MDC
INTELSAT V 2	C	A	Y	Y	Y					A		384MDC
FOR. COMM/SBS 1	C	A	Y	Y	Y					A		402MDC
FOR. COMM/SBS 2	C	A	Y	Y	Y					A		403MDC
FOREIGN COMM.	C	A	Y	Y	Y					A		424MDC
US COMM&FOR. COMMUN.	C	A	Y	Y	Y					A		427MDC
US & FOREIGN COMM. 4	C	A	Y	Y	Y					A		428MDC
US COMMUN. 10	C	A	Y	Y	Y					A		441MDC
US COMMUN.12	C	A	Y	Y	Y					A		443MDC
US COMMUN. 15	C	A	Y	Y	Y					A		444MDC

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SERVICE FUNCTIONS

SATELLITE	* * * 90 CATEGORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
ST SPACE TELESCOPE	A	A	A	A	A	A	A	A	A	A	YES	004STM
GRO-GAMMA RAY OBS R	A	A	A	A	A	A	A	A	A	A	---	008STM
AXAF-ADV X-RAY AST R	P	A	A	A	A	A	A	A	A	A	YES	011STM
CRO-COSMIC RAY OBS R	C	A	A	A	A	A	A	A	A	A	--	014STM
LG SOLAR OBSER	C	Y	Y	Y	Y					Y	YES	016LEP
ERBS-EARTH RAD BUD R	A	A	A	A	A	A	A	A	A	A	YES	021STM
LDEF RETURN 5	A		A	A							YES	041STM
THERMOSAT 2	A	A	Y	Y	Y					A	YES	055LEP
GRAVSAT A,B 2	A	A	Y	Y	Y					A	---	067LEP
OP EAR RES RETURN C	P	A	A	A	A	A	A	A	A	A	YES	079LEP
NOSS-NAT. OCEAN SAT	A	A	Y	Y	Y					A	YES	087LEP
GEO COMM PLAT XFER	P	A	Y	Y	Y					A	YES	096STM
SOC SP OPS CENTER	O	Y	Y	Y	Y	Y	Y	Y		Y	YES	097STM
POLAIRE 2	P	A	Y	Y	Y					A	---	103LEP
USAF SP TST PROG 10	P				Y					Y	---	117LEP
DEF MET SAT RETURN 8	A									Y	YES	132LEP
DEF MET SAT PROG 9	A				Y					Y	YES	133LEP
TRANSIT 7	A				Y					Y	---	141LEP
EARTH OBS/COMMUN 1	C	Y	Y	Y	Y					Y	YES	323MDC
RESOURCES/POLLUTION	C	Y	Y	Y	Y					Y	YES	329MDC
RESOURCES/POLLUTION	C	Y	Y	Y	Y					Y	YES	341MDC
INMARSAT	C	A	Y	Y	Y					A		351MDC
INMARSAT 1	C	A	Y	Y	Y					A		352MDC
INMETSAT 6	C	A	Y	Y	Y					A		363MDC
INMETSAT 7	C	A	Y	Y	Y					A		364MDC
INMETSAT 8	C	A	Y	Y	Y					A		365MDC

SERVICE FUNCTIONS

SATELLITE	CATE GORY	DEPL ***	EXAM ***	RETVL 90	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
INTELSAT V 1	C	A	Y	Y	Y					A		385MDC
INTELSAT V 2	C	A	Y	Y	Y					A		386MDC
FOREIGN COMM/SBS 1	C	A	Y	Y	Y					A		404MDC
FOREIGN COMM/SBS 2	C	A	Y	Y	Y					A		405MDC
FOREIGN COMM/SBS 3	C	A	Y	Y	Y					A		406MDC
FOREIGN COMM/SBS 4	C	A	Y	Y	Y					A		407MDC
FOREIGN COMM/SBS 5	C	A	Y	Y	Y					A		408MDC
US & FOREIGN COMM. 5	C	A	Y	Y	Y					A		429MDC
US COMMUN. 6	C	A	Y	Y	Y					A		438MDC
US COMMUN. 7	C	A	Y	Y	Y					A		439MDC
US COMMUN. 8	C	A	Y	Y	Y					A		440MDC
US COMMUN.11	C	A	Y	Y	Y					A		442MDC
FOREIGN COMMUN 1	C	A	Y	Y	Y					A		445MDC
GEO COMM PLAT STRUCT	P	A	A	A	A					A	---	450STM

SERVICE FUNCTIONS

SATELLITE	CATE GORY	DEPL	EXAM	RETVL	SUPPORT C/O RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
	*** 91	***									
GRO-GAMMA RAY OBSERV	A	A	A	A	A	A	A	A	A	---	009STM
AXAF-ADV X-RAY AST	P	A	A	A	A	A	A	A	A	YES	012STM
CRO-COSMIC RAY OBS	C	A	A	A	A	A	A	A	A	---	015STM
ERBS-EARTH RAD BUD S	A	A	A	A	A	A	A	A	A	YES	022STM
ENVIRON MONITOR 1	C	Y	Y	Y	Y				Y	YES	025LEP
LDEF 6	A	A	A	A	A	A	A	A	A	YES	042STM
ADVANCED RELATIVITY	C	Y	Y	Y	Y				Y	---	047LEP
ADVANCED RELATIVIT 1	C	Y	Y	Y	Y				Y	---	048LEP
EARTH SURVEY 3	P	A	Y	Y	Y				A	YES	056LEP
OP CAR RES SAT B2	P	A	Y	Y	Y				A	YES	077LEP
SCADM SOL CYL*DYN	C	A	A	A	A	A	A	A	A	YES	094STM
UNP PROG-URAN NEP PL	C	Y	Y	Y	Y				Y	YES	098STM
ALL WEATHER MICRO 2	P	Y	Y	Y	Y				Y	---	105LEP
USAF SP TST PROG 11	P									---	118LEP
DEF MET SAT RETURN 4	A									YES	126LEP
DEF MET SAT PROG 5	A									YES	127LEP
TRANSIT 8	A									---	142LEP
RESOURCES/POLLUTION	C	Y	Y	Y	Y				Y		330MDC
MAP GRAVITY FIELD/CO	C	Y	Y	Y	Y				Y		332MDC
RESOURCES/POLLUTION	C	Y	Y	Y	Y				Y		337MDC
RESOUR POLLUTION	C	Y	Y	Y	Y				Y		339MDC
FOR.COMMUN/EARTH OBS	C	Y	Y	Y	Y				Y		355MDC
INMETSAT 9	C	A	Y	Y	Y				A		366MDC
INMETSAT 10	C	A	Y	Y	Y				A		367MDC
INMETSAT 11	C	A	Y	Y	Y				A		368MDC
INMETSAT 12	C	A	Y	Y	Y				A		369MDC

SERVICE FUNCTIONS

SATELLITE	* * * 91 CATE GORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
FOREIGN COMM/EAR.OBS	C	Y	Y	Y	Y	Y	Y	Y	Y		370MDC
FOR.COMM/EARTH OBS.	C	Y	Y	Y	Y	Y	Y	Y	Y		371MDC
FOREIGN COMM/SBS 1	C	A	Y	Y	Y				A		409MDC
FOREIGN COMM/SBS 2	C	A	Y	Y	Y				A		410MDC
FOREIGN COMM/SBS 3	C	A	Y	Y	Y				A		411MDC
FOREIGN COMM/SBS 4	C	A	Y	Y	Y				A		412MDC
FOREIGN COMM/SBS 5	C	A	Y	Y	Y				A		413MDC
US & FOREIGN COMM. S	C	A	Y	Y	Y				A		430MDC
ELECTRONIC MAIL	D	Y	Y	Y	Y				Y	---	449MDC
MAG FIELD SURV B MAI	C	A	Y	Y	Y				Y		614STM

SERVICE FUNCTIONS

SATELLITE	* * * 92 CATE GORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
LDEF RETURN 6	A		A	A						A	YES	043STM
GL REG ATMOS MON 2	P	Y	Y	Y	Y					Y	YES	053LEP
UNP PROG-URAN NEP PL	C	Y	Y	Y	Y					Y	YES	063STM
ADV GEO SAT 2	A	Y	Y	Y	Y					Y	---	069LEP
OP EAR RES RETURN 2	A		Y	Y						A	YES	074LEP
OP EAR RES SAT C2	P	A	Y	Y	Y					A	YES	080LEP
NOSS-NAT. OCEAN SAT	A	A	Y	Y	Y					A	YES	084LEP
OP METEOR RETRVL	C		Y	Y						Y	YES	100STM
MANNED GEO SORTIE	C	Y	Y	Y	Y					Y	YES	101STM
PRI EARTH RES 2	P	Y	Y	Y	Y					Y	YES	107LEP
DEF MET SAT RETURN 9	A										YES	134LEP
DEF MET SAT PROG 10	A										YES	135LEP
TRANSIT 9	A										---	143LEP
TRANSIT 10	A										---	144LEP
PERSONAL COMM. DEMO	O	Y	Y	Y	Y					Y	---	446MDC
SOLAR PWR SYS.TST.	O	Y	Y	Y	Y	Y	Y	Y		Y	---	455MDC
SUBMILLIM TELE	C	Y	Y	Y	Y					Y	YES	612STM
AMBIENT IR TELE	C	Y	Y	Y	Y	Y	Y	Y		Y	YES	613STM

SERVICE FUNCTIONS

SATELLITE	* * * 93 CATE SORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
EDUCATIONAL TV	O	Y	Y	Y	Y					Y	---	448MDC
IR INTERFEROMETER	O	Y	Y	Y	Y					Y		617STM
UNP PROG-URAN NEP PL	C	Y	Y	Y	Y					Y		618STM
ASTEROID MULT RENDZ	O	Y	Y	Y	Y					Y		619STM
LUNAR POLAR ORB	O	Y	Y	Y	Y					Y		620STM
NR EARTH ASTER SAMPL	O	Y	Y	Y	Y					Y		621STM
MAG FIELD SURV B RET	P		Y	A						A		622STM

SERVICE FUNCTIONS

SATELLITE	* * * 94 CATE GORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CMTM SENS	FILE NUMBER
OP EAR RES SAT C	P	A	Y	Y	Y	Y			A	YES	078LEP
NUCL.WST.DISP.	O	A	Y	Y	Y					---	454HDC
GRAV WAVE INTERFEROM	O	Y	Y	Y	Y	Y	Y	Y	Y		623STM
MARS ADVANCED TECH	P	Y	Y	Y	Y				Y		624STM
UNP PROG-URAN NEP PL	C	Y	Y	Y	Y				Y		625STM
LUNAR LAND SAMP-RET	O	Y	Y						Y		626STM

SERVICE FUNCTIONS

SATELLITE	CATE GORY	* * * 95 DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	* * * EART RETR	CNTM SENS	FILE NUMBER
PERSONAL COMM. ADV.	0	Y	Y	Y	Y					Y	---	447MDC
ORB.DP.SP.RLY.STAT.	0	Y	Y	Y	Y					Y	---	453MDC
MOD.SERV.MISSION	0	Y	Y	Y	Y					Y	---	456MDC
AUTO PLANET STAT-RES	0	Y	Y	Y	Y					Y		615STM
MERC ORBIT & LAND	0	Y	Y	Y	Y					Y		627STM
AUTO PLANET STATION	0	Y	Y	Y	Y					Y		628STM
GANYMEDE LANDER	0	Y	Y	Y	Y					Y		629STM
CLOSE SOLAR ORBITER	0	Y	Y	Y	Y					Y		630STM

SERVICE FUNCTIONS

SATELLITE * * * 96	CATE GORY	DEPL * * *	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
ODSRS-ORB DEP SP REL	O	Y	Y	Y	Y					Y		631STM
ODSRS-ORB DEP SP REL	O	Y	Y	Y	Y					Y		632STM
ODSRS-ORB DEP SP OTV	O	Y	Y	Y	Y					Y		633STM
COSMIC-CON OPT MOD I	O	Y	Y	Y	Y					Y		634STM
MARS ADV TECH(RETURN	P	Y	Y							Y		635STM
NR EARTH ASTER(RETUR	O	Y	Y							Y		636STM
AUTO PLANET STATION-	O	Y	Y	Y	Y					Y		637STM

SERVICE FUNCTIONS

SATELLITE	* * * 97 CATE GORY	* * * DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
LG OPT UV TELESCOPE	0	Y	Y	Y	Y					Y		638STM
COMET SAMPLE RETURN	0	Y	Y	Y	Y					Y		639STM
VENUS LANDER	0	Y	Y	Y	Y					Y		640STM
AUTO MOBILE LUNAR SU	0	Y	Y	Y	Y					Y		641STM

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SERVICE FUNCTIONS

SATELLITE	* * * 98 * * * CATE GORY	DEPL	EXAM	RETVL	SUPPORT C/O	SUPPORT RPR	SUPPORT MAINT	SUPPORT RESUPLY	SUPPORT RECONFG	EART RETR	CNTM SENS	FILE NUMBER
GEOSTAT.COMM.PLAT.FC											---	451MDC
100 M THIN APER TELE 0												616STM

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APPENDIX C
ASSESSMENT OF MANNED, REMOTE, & AUTOMATED INVOLVEMENT

APPENDIX C

ASSESSMENT OF MANNED, REMOTE, & AUTOMATED INVOLVEMENT

Appendix C details the extent of manned involvement required to perform service functions beneficial to the candidate satellites/payloads. The activities reported herein were supported by Grumman's Independent Research and Development (IRAD) efforts. Each satellite/payload in the SUM was assessed for:

- Direct Manned Involvement (M)
- Remote with man-in-the-loop (R)
- Automated, hands-off operations (A).

Pages C6 through C31 assess the extent of manned involvement for the top level service functions of Deployment, Examination, Retrieval and Support-Checkout and Repair. Figure C1 lists the servicing options identified for each top level service function and the acronyms used in the tabular listings that follow.

Various servicing options for each of the top level service functions (e.g. Deployment, Retrieval, Support) were identified and assessed, if applicable, for each satellite listing. The servicing options themselves connote the extent of manned involvement, being either Direct (M), Remote (R), or totally Automated (A) operations.

Service Function	Servicing Option	Acronym
Deployment	• Deployment via Stored Energy System	DEPL EGY
	• Deployment via Undocking	DEPL UDK
	• Deployment via Remote Manipulator System	DEPL RMS
Examination	• Examination via Remote Manipulator System (Payload is attached to Orbiter)	EXAM EVA
	• Examination via Manned Free Flyer (Satellite is remote from Orbiter)	EXAM MFF
	• Examination via Unmanned Free Flyer (Satellite is remote from Orbiter)	EXAM UFF
Retrieval	• Retrieval via Remote Manipulator System	RETV RMS
	• Retrieval via Unmanned Free Flyer	RETV UFF
Support	• Checkout/Repair while satellite is Orbiter attached and performed via:	C/O RPR OA
	- Extra Vehicular Activity	EVA
	- Manned Free Flyer	MFF
	- Remote Manipulator System	RMS
Checkout and Repair	• Checkout/Repair while satellite is separated from Orbiter and performed via:	C/O RPR OS
	- Manned Free Flyer	MFF
	- Unmanned Free Flyer	UFF
	• Checkout/Repair involving Space Platform operations and performed via:	C/O RPR PLT
	- EVA Closed Cabin	E/C
	- Manned Free Flyer	MFF
	- Remote Manipulator System	RMS

Fig. C1 Servicing Options for Deployment, Examination, Retrieval, and Support Checkout and Repair

Pages C32 through C57 assess the extent of manned involvement for top level service functions of Support-Maintenance and Support-Resupply. Figure C2 lists the applicable servicing options for each top level service function and the acronyms used in the tabular listings that follow.

Service Function	Servicing Option	Acronym
Support-Maintenance	• Maintenance of satellites while Orbiter attached and performed via:	MAI NT OA
	- Extra Vehicular Activities	EVA
	- Manned Free Flyer	MFF
	- Remote Manipulator System	RMS
	• Maintenance of satellites while separated from Orbiter and performed via:	MAI NO OS
	- Manned Free Flyer	MFF
	- Unmanned Free Flyer	UFF
	• Maintenance of satellites involving Platform operations and performed via:	MAI NT PLT
	- EVA Closed Cabin	E/C
	- Manned Free Flyer	MFF
	- Remote Manipulator System	RMS
Support-Resupply	• Resupply of satellite while Orbiter attached and performed via:	RES PLY OA
	- Extra Vehicular Activities	EVA
	- Manned Free Flyer	MFF
	- Remote Manipulator System	RMS
	• Resupply of satellite while separated from Orbiter and performed via:	RES PLY OS
	- Manned Free Flyer	MFF
	- Unmanned Free Flyer	UFF

Service Function	Servicing Option	Acronym
Support-Resupply (cont'd)	• Resupply of satellite involving Platform operations and performed via:	RESPLY PLT
	- EVA Closed Cabin	E/C
	- Manned Free Flyer	MFF
	- Unmanned Free Flyer	UFF

Fig. C2 Servicing Options for Support-Maintenance and Support-Resupply

Pages C58 through C83 assess the extent of manned involvement for the top level service functions of Support-Reconfiguration and Earth Return. Figure C3 lists the applicable servicing options for each top level service function and the acronyms used in the tabular listings that follow.

Service Function	Servicing Option	Acronym
Support Reconfiguration	• Reconfiguration of satellite while Orbiter attached and performed via:	RECFIG OA
	- Extra Vehicular Activity	EVA
	- Manned Free Flyer	MFF
	- Remote Manipulator System	RMS
	• Reconfiguration of satellite while separated from Orbiter and performed via:	RECFIG OS
	- Manned Free Flyer	MFF
	- Unmanned Free Flyer	UFF
	• Reconfiguration of satellite involving Platform operations and performed via:	RECFIG PLT
	- Extra Vehicular Activity	EVA
	- Manned Free Flyer	MFF
	- Unmanned Free Flyer	UFF
Earth Return	• Earth Return via Orbiter; Satellite is attached to Orbiter and performed via:	ER ORB OA
	- Extra Vehicular Activities	EVA
	- Manned Free Flyer	MFF
	- Remote Manipulator System	RMS

Service Function	Servicing Option	Acronym
Earth Return	• Earth Return via Propulsion Stage- propulsion stage is attached while the satellite is attached to Orbiter and performed via:	ER PRO PRB
	- Extra Vehicular Activities	EVA
	- Manned Free Flyer	MFF
	- Remote Manipulator System	RMS
	• Earth Return via Propulsion Stage - propulsion stage is attached while the satellite is separated from the Orbiter and performed via:	ER PRO RMT
	- Extra Vehicular Activity	EVA
	- Unmanned Free Flyer	UFF

Fig. C3 Servicing Options for Support-Reconfiguration and Earth Return

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
IRAS-IR ASTRO SAT-R				C			R	R												044STM
IECM-IND ENV CONTAM			R	M																203FAM
IECM-IND ENV CONTAM			R	M																208FAM
FILE-FEAT IDENT LAND																				223FAM
IECM-IND ENV CONTAM	A		R	M																225FAM
PDRS TEST ART.			R	M																227FAM

* * * COUNT OF 6 FOR 81

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
SMM-SOLAR MAX RETURN				M	M			R												119STM
IECM.GAS TEST ARTICL			R	M																228FAM
TDRS-A	A		R	M	R	M	R	R			M		R							250STM
INTELSAT F5	A			M	R	M	R	R			M		R							251AVN
TELESAT E	A			M	R	M	R	R			M		R							252AVN
SPAS-01 STS PALL SAT	A			M	R	M	R	R			M		R							257AVN
DOD 82-1				M	R						M		R							261AVN
SBS-C	A			M	R	M	R	R			M		R							264AVN

* * * COUNT OF 8 FOR 82

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SERVICING OPTIONS-1

* * * 83 * * *

SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	FLT RMS	FILE NUMBER
LANDSAT C			R	M	R	M	R	R			M		R							061STM
DEF MET SAT PROG 1																				120LEP
SBS-B	A			M	R	M	R	R			M		R							253AVN
TDRS-B			R	M	R	M	R	R			M		R							254AVN
INTELSAT B(F-6)	A			M	R	M	R	R			M		R							255AVN
TELSAT F	A			M	R	M	R	R			M		R							256AVN
SPACELAB-1 LONG MOD				M	R						M		R							258AVN
TDRS-C			R	M	R	M	R	R			M		R							259AVN
MEA-1				M	R						M		R							260AVN
OSTA-2(SEPS)				M	R						M		R							263AVN
INSAT-1A	A			M	R	M	R	R			M		R							267AVN
TDRS-D			R	M	R	M	R	R			M		R							268AVN
SPACELAB-2				M	R						M		R							269AVN
DOD 83-1																				270AVN
RCA-E	A			M	R	M	R	R			M		R							274AVN
INSAT-1B	A			M	R	M	R	R			M		R							275AVN
DOD 83-2																				277AVN
DOD 83-3																				278AVN
TEAL RUBY IR																				554STP
CHEM REL MODULE			R	M	R	M	R	R			M		R							600STM

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
PALAPA B2	A			M	R	M	R	R			M		R							202FAM
MPS-1 MATL PROCESSIN				M	R						M		R							262STM
SPACELAB-3 LONG MOD				M	R						M		R							272AVN
SYNCOM IV-1 LEASAT	A			M	R	M	R	R			M		R							273AVN
MPS-2 MATL PROCESSIN				M	R						M		R							276AVN
TELESAT-G	A			M	R	M	R	R			M		R							279AVN
PALAPA B/1	A			M	R	M	R	R			M		R							280AVN
SPACELAB 4 LIFE SCI.				M	R						M		R							281AVN
ERBS-EARTH RAD BUDGT			R	M	R	M	R	R			M	M	R							282AVN
RCA-F	A			M	R	M	R	R			M		R							283AVN
ARABSAT-A	A			M	R	M	R	R			M		R							284AVN
OSS-2				M							M									285AVN
AT&T-1	A			M	R	M	R	R			M		R							286AVN
AMPTE-ACT MAG PART E	A			M	R	M	R	R			M		R							287STM
SYNCOM IV-2 LEASAT	A			M	R	M	R	R			M		R							288AVN
ST-SPACE TELESCOPE			R	M	R	M	R	R			M	M	R							289STM
LDEF			R	M	R	M		R			M		R							290STM
PALAPA-B/2	A			M	R	M	R	R			M		R							291AVN
AT&T-2	A			M	R	M	R	R			M		R							292AVN
ARABSAT-B	A			M	R	M	R	R			M		R							293AVN
SYNCOM IV-3 LEASAT	A			M	R	M	R	R			M		R							294AVN
GALILEO ORBITER			R	M	R	M	R	R			M		R							295STM
GALILEO PROBE			R	M	R	M	R	R			M		R							296STM
OSTA-3																				298AVN
INTELSAT-C	A			M	R	M	R	R			M		R							300AVN
TELESAT-I	A			M	R	M	R	R			M		R							301AVN

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
RCA-G	A			M	R	M	R	R			M		R							302AVN
SPACELAB-01 BMFT				M	R						M		R							303AVN
LANDSAT D RETRIEVAL					R	M		R												309AVN
SPACELAB-6(SOLAR TER				M	R						M		R							310AVN
DOD 84-1																				315AVN
OSTA-2(MEA-MAUS)				M	R						M		R							372FAM
NOAA-G			R	M	R	M	R	R			M		R							373FAM
DOD 85-1																				374FAM

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
DOD 85-7																				001FAM
DOD 85-8																				002FAM
GRO-GAMMA RAY OBSEV.			R	M	R	M	R	R			M		R							005STM
EUVE-EXT ULTRAVIOLET			R	M	R	M	R	R			M		R							017STM
LDEF RETRIEVAL				M	R	M	R	R												033STM
COBE COSMC BKGND EXP			R	M	R	M	R	R												045STM
GRAVSAT A1	A			M	R	M	R	R			M		R							066LEP
DEF MET SAT PROG 2																				121LEP
DEF MET SAT PROG 7																				129LEP
DOD 86-1																				155FAM
NASA FREE FLYER																				195FAM
REF_IGHT OPP																				196FAM
DOD 85-8																				197FAM
ISPM-SOLAR POLAR NAS			R	M	R	M	R	R			M		R							198FAM
DOD 85-9																				201FAM
MAGSAT B	A			M	R	M	R	R			M		R							219NAS
ISPM-SOLAR POLAR ESA			R	M	R	M	R	R			M		R							271AVN
SPACELAB-5 ASTROPHYS				M	R						M		R							299AVN
MPS-3 MATL PROCESSIN				M	R						M		R							304AVN
SBS-D	A			M	R	M	R	R			M		R							305AVN
PRC-1 PEOP REP CHINA	A			M	R	M	R	R			M		R							306AVN
SYNCOM IV-4 LEASAT	A			M	R	M	R	R			M		R							307AVN
OSS-3					R						M		R							312AVN
RCA-H	A			M	R	M	R	R			M		R							313AVN
SPACELAB-7 EAR OBSV				M	R						M		R							314AVN
SYNCOM IV-5 LEASAT	A			M	R	M	R	R			M		R							318AVN

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/C MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
SPACELAB-8 MATL PROC				M	R						M		R							319AVN
INMARSAT	A			M	R	M	R	R			M		R							348MDC
AT&T-3	A			M	R	M	R	R			M		R							375FAM
INTELSAT-D	A			M	R	M	R	R			M		R							376MDC
INTELSAT V	A			M	R	M	R	R			M		R							377MDC
DOD 85-3																				387FAM
DOD 85-4																				388FAM
INTER COMET MISSION			R	M	R	M	R				M		R							390STM
PEP-PWR EXT PKG			R	M	R	M	R				M	M	R							391STM
DOD 85-6																				414FAM
SPACELAB D4 (BMFT)				M	R						M		R							415FAM
TELESAT-F	A			M	R	M	R	R			M		R							416MDC
OSS-4																				419FAM
OSTA-4																				420FAM
DOD 85-5																				421FAM
GRAVSAT A2	A			M	R	M	R	R			M		R							431FAM
SPACELAB 10(LIFE SC)				M	R						M		R							432FAM
SIRE-SPACE IR																				553STP
TALON GOLD LASER																				558STP
CHEM REL MODULE			R	M	R	M	R	R			M		R							604STM
LG DEPLOY ANTENNA			R	M	R	M	R	R			M	M	R							605STM
DOD 85-2																				613FAM

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
ERBS-EARTH RAD BUD-R			R	M	R	M	R	R			M		R							019LEP
REGION H2O QUAL. MON A				M	R	M	M	R			M		R							023LEP
SCADM-SOL CYC&DYN			R	M	R	M	R	R			M		R							028LEP
UARS-UPPER ATMOS RES			R	M	R	M	R	R			M		R							030LEP
GRAVITY PROBE B			R	M	R	M	R	R			M		R							046LEP
NOSS-NAT. OCEAN SAT			R	M	R	M	R	R			M		R							081LEP
NOSS-NAT. OCEAN SAT			R	M	R	M	R	R			M		R							085LEP
SASP-SC & APP SP PLA		R	R	M	R	M	R	R			M	M	R	M	R					093STM
DOD 86-5																				095FAM
TRANSIT 1																				136LEP
TRANSIT 2																				137LEP
DOD 86-6																				147FAM
DOD 86-7																				148FAM
DOD 86-8																				149FAM
DOD 86-9																				150FAM
DOD 86-10																				151FAM
DOD 86-11																				152FAM
NOAA I			R	M	R	M	R	R			M		R							154FAM
NOAA H			R	M	R	M	R	R			M		R							156FAM
REFLIGHT OPP.																				191FAM
REFLIGHT OPP																				192FAM
NASA FREE FLYER																				193FAM
EUVE-EXT ULTRAVIOLET			R	M	R	M	R	R			M		R							194FAM
DOD 86-2																				204FAM
SPACELAB-16 SOLR PHY				M	R						M		R							205FAM
HI ENERGY EX																				206NAS

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
OSS-5																				209FAM
SPACELAB-13 MATL SCI				M	R						M		R							210FAM
OSS-6																				212FAM
SPACELAB-9 ASTRPHYS				M	R						M		R							213FAM
MPS-4				M	R						M		R							214FAM
SPACELAB-11 PLASMA				M	R						M		R							216FAM
SPACELAB-15 LIFE SCI				M	R						M		R							217FAM
DOD 86-3																				218FAM
DOD 86-4																				220FAM
25 KW PW MOD		R	R	M	R	M	R	R			M	M	R							222NAS
PRC-2 PEOP REP CHINA	A			M	R	M	R	R			M		R							316AVN
GLOBAL DISASTER COMM	A			M	R	M	R	R			M		R							320MDC
GOES-GEOS OP ENV SAT	A			M	R	M	R	R			M		R							343STM
INMARSAT	A			M	R	M	R	R			M		R							349MDC
INTELSAT E	A			M	R	M	R	R			M		R							378MDC
INTELSAT F	A			M	R	M	R	R			M		R							379MDC
X-RAY TIME EXP			R	M	R	M	R	R			M		R							392STM
VENUS OREIT IMG RAD			R	M	R	M	R	R			M		R							393STM
30/20 GHZ ANT TRUNK			R	M	R	M	R	R			M		R							394STM
SEPS-SOL ELECT PROP			R	M	R	M	R	R			M		R							395STM
LG STRUCT CONSTR		R	R	M	R	M	R	R			M		R							396STM
ROMS-P																				555STP
SIRTF-IR TELE FAC	A		R	M	R	M	R				M		R							606STM
OPEN-ORIG PLASMA ETH	A			M	R	M	R	R			M		R							607STM
SUBSAT FAC-FREE FLYE	Y		R	M	R	M	R	R			M		R							608STM

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SERVICING OPTIONS-1

SATELLITE	DEPL EGY	* * * 87 DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	D-A RMS	C/O MFF	RPR UFF	D-S	C/O E/C	RPR MFF	RLT RMS	FILE NUMBER
GRO-GAMMA RAY OBS-RE			R	M	R	M	R	R			M		R							006STM
AXAF-ADV X-RAY ASTRO			R	M	R	M	R	R			M		R							010STM
CRO-COSMIC RAY OBSER			R	M	R	M	R	R			M	M	R							013STM
ERBS-EARTH RAD BUD			R	M	R	M	R	R			M		R							020LEP
LDEF RETURN 3				M	R	M	R	R												037LEP
TOPEX-TOPOG EXP			R	M	R	M	R	R			M		R							051LEP
EARTH SURVEY 1	A			M	R	M	R	R			M		R							054LEP
LANDSAT RETURN 2				M	R	M	R	R												060LEP
SOIL MOISTURE			R	M	R	M	R	R			M		R							070LEP
SOLAR PROBE			R	M	R	M	R	R			M		R							095STM
POLAIRE 1			R	M	R	M	R	R			M		R							102LEP
ALL WEATHER MICRO 1			R	M	R	M	R	R			M		R							104LEP
USAF SP TST PROG 7	A			M	R	M	R	R			M		R							114LEP
DEF MET SAT RETURN 2																				122LEP
DEF MET SAT PROG 3																				123LEP
TRANSIT 3																				138LEP
GOES-H GEO ORB ENV S	A			M	R	M	R	R			M		R							153STM
PLASMA TURB EXP	A			M	R	M	R	R			M		R							211STM
COASTAL SAT.			R	M	R	M	R	R			M		R							226NAS
STORMSAT			R	M	R	M	R	R			M		R							321MDC
EARTH OBS/COMMUN .L	A			M	R	M	R	R			M		R							322MDC
MAP GRAVITY FIELD/CO	A			M	R	M	R	R			M		R							331MDC
RESOURCES/POLLUTION	A			M	R	M	R	R			M		R							333MDC
FOR.COMMUN/EARTH OBS	A			M	R	M	R	R			M		R							353MDC
INMETSAT	A			M	R	M	R	R			M		R							356MDC
INTELSAT V	A			M	R	M	R	R			M		R							380MDC

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SERVICING OPTIONS-1

SATELLITE * * * 87	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	D-A RMS	C/O MFF	RPR UFF	D-S	C/O E/C	RPR MFF	FLT RMS	FILE NUMBER
FOREIGN COMM/SBS																				397NDC
US & FOR. COMMUN 1	A			M	R	M	R	R			M		R							425NDC
US & FOR. COMMUN 2	A			M	R	M	R	R			M		R							426NDC
LASS-LG AREA STRUCT			R	M	R	M	R	R			M	M	R							556STP
NRV HIGH ALT.																				557STP
STARLAB TELESCOPE			R	M	R	M					M		R							609STM
SOLAR SOFT X-RAY			R	M	R	M					M		R							610STM

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
GRO-GAMMA RAY OBSERV			R	M	R	M	R	R			M		R							007STM
VLBI-VERY LG BASE IN			R	M	R	M	R	R			M	M	R							026LEP
SPACELAB-PIN HOLE				M	R						M		R							031STM
LDEF 4			R	M	R	M	R	R			M		R							038STM
ATMAS-ADV THERAL MAP			R	M	R	M	R	R			M		R							049STM
GL REG ATMOS MON 1			R	M	R	M	R	R			M		R							052LEP
THERMOSAT 1			R	M	R	M	R	R			M		R							064LEP
ADV GEO SAT 1																				068LEP
OP EARTH RES SAT A			R	M	R	M	R	R			M		R							071LEP
OP EAR RES RETURN A			R	M	R	M	R	R			M		R							072LEP
NOSS-NAT. OCEAN SAT			R	M	R	M	R	R			M		R							082LEP
THIN ROOT SYS COMM			R	M	R	M	R	R			M		R							099STM
PRIV EARTH RES 1			R	M	R	M	R	R			M		R							106LEP
USAF SP TST PROG 8																				115LEP
DEF MET SAT RETURN 7																				130LEP
DEF MET SAT PROG 8																				131LEP
TRANSIT 4																				139LEP
TRANSIT 5																				146LEP
RESOURCES/POLLUTION	A			M	R	M	R	R			M		R							328MDC
RESOURCES/POLLUTION	A			M	R	M	R	R			M		R							334MDC
EARTH OBS/COMMUN.	A			M	R	M	R	R			M		R							339MDC
RESOURCES/POLLUTION	A			M	R	M	R	R			M		R							340MDC
MAG FIELD SURV 8			R	M	R	M	R	R			M		R							344STM
30/20 GHZ ANT CUST	A			M	R	M	R	R			M		R							346STM
INMETSAT	A			M	R	M	R	R			M		R							357MDC
INMETSAT 1	A			M	R	M	R	R			M		R							358MDC

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	* * * DEPL VDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
INTELSAT V 1	A			M	R	M	R	R			M		R							381MOC
INTELSAT V 2	A			M	R	M	R	R			M		R							382MOC
FOR. COMM/SBS 1	A			M	R	M	R	R			M		R							398MOC
FOR. COMM/SBS 2	A			M	R	M	R	R			M		R							399MOC
FOR. COMM/SBS 3	A			M	R	M	R	R			M		R							400MOC
FOR. COMM/SBS 4	A			M	R	M	R	R			M		R							401MOC
US COMMUN. 1	A			M	R	M	R	R			M		R							433MOC
US COMMUN. 2	A			M	R	M	R	R			M		R							434MOC
US COMMUN. 3	A			M	R	M	R	R			M		R							435MOC
US COMMUN. 4	A			M	R	M	R	R			M		R							436MOC
US COMMUN. 5	A			M	R	M	R	R			M		R							437MOC
SCI.APPLIC.PLATFORM		R	R	M	R	M	R				M	M	R	M	R					452MOC
LAMAR-LG AREA MOD AR	A		R	[illegible]	R	M	R	R			M		R							611STM

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SERVICING OPTIONS-1

SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
	* * * 89		* * *																	
ST-SPACE TELESCOPE				M	R	M	R	R			M		R							003STM
ENVIRON MONITOR			R	M	R	M	R	R			M		R							024LEP
VLBI-VERY LG BASE IN			R	M	R	M	R	R			M	M	R							027LEP
SCADM-SOL CYCEDYN R			R	M	R	M	R	R			M		R							029LEP
LDEF RETURN 4				M	R	M	R	R												039STM
LDEF 5			R	M	R	M	R	R			M		R							040STM
ICEX-ICE & CLIM EXP			R	M	R	M	R	R			M		R							050LEP
EARTH SURVEY 2			R	M	R	M	R	R			M		R							055LEP
OTV-ORBIT XFER VEH D			R	M	R	M	R	R			M		R							062STM
OP EAR RES SAT 2			R	M	R	M	R	R			M		R							072LEP
OP EAR RES SAT B			R	M	R	M	R	R			M		R							075LEP
OP EAR RES RETURN B				M	R	M	R	R												076LEP
NOSS-NAT. OCEAN SAT			R	M	R	M	R	R			M		R							083LEP
NOSS-NAT. OCEAN SAT			R	M	R	M	R	R			M		R							086LEP
OP METEOROLOGY			R	M	R	M	R	R			M		R							090STM
SATURN ORBIT(DUAL)			R	M	R	M	R	R			M		R							091STM
SOLAR TERR OBS			R	M	R	M	R	R			M		R							092STM
USAF SP TST PROG 9																				116LEP
DEF MET SAT RETURN 3																				124LEP
DEF MET SAT PROG 4																				125LEP
TRANSIT 6																				140LEP
EARTH OBS/COMMUN.			R	M	R	M	R	R			M		R							325MDC
EARTH OBS/COMMUN.	A			M	R	M	R	R			M		R							327MDC
RESOURCES/POLLUTION	A			M	R	M	R	R			M		R							335MDC
RESOURCE/POLLUTION	A			M	R	M	R	R			M		R							336MDC
ASTRONOMY AF(1)																				342MDC

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	FLT RMS	FILE NUMBER
SOIL MOIST ASSMT			R	M	R	M	R	R			M		R							345STM
OCEAN RES (SAR)																				347STM
MAG FLD SURV B-MAINT				M	R	M	R	R			M		R							350STM
FOR.COMMUN/EARTH OBS	A			M	R	M	R	R			M		R							354MDC
INMETSAT 2	A			M	R	M	R	R			M		R							359MDC
INMETSAT 3	A			M	R	M	R	R			M		R							360MDC
INMETSAT 4	A			M	R	M	R	R			M		R							361MDC
INMETSAT 5	A			M	R	M	R	R			M		R							362MDC
INTELSAT V 1	A			M	R	M	R	R			M		R							383MDC
INTELSAT V 2	A			M	R	M	R	R			M		R							384MDC
FOR. COMM/SBS 1	A			M	R	M	R	R			M		R							402MDC
FOR. COMM/SBS 2	A			M	R	M	R	R			M		R							403MDC
FOREIGN COMM.	A			M	R	M	R	R			M		R							424MDC
US COMM&FOR. COMMUN.	A			M	R	M	R	R			M		R							427MDC
US & FOREIGN COMM. 4	A			M	R	M	R	R			M		R							428MDC
US COMMUN. 10																				441MDC
US COMMUN.12																				443MDC
US COMMUN. 15																				444MDC

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SERVICING OPTIONS-1

SATELLITE	DEPL EGY	* * * DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
ST SPACE TELESCOPE			R	M	R	M	R	R			M	M	R							004STM
GRO-GAMMA RAY OBS R			R	M	R	M	R	R			M		R							008STM
AXAF-ADV X-RAY AST R			R	M	R	M	R	R			M		R							011STM
GRO-COSMIC RAY OBS R			R	M	R	M	R	R			M		R							014STM
LG SOLAR OBSER			R	M	R	M	R	R			M	M	R							016LEP
ERBS-EARTH RAD BUD R			R	M	R	M	R	R			M		R							021STM
LDEF RETURN 5				M	R	M	R	R												041STM
THERMOSAT 2			R	M	R	M	R	R			M		R							065LEP
GRAVSAT A.B 2			R	M	R	M	R	R			M		R							067LEP
OP EAR RES RETURN C				M	R	M	R	R												079LEP
NOSS-NAT. OCEAN SAT			R	M	R	M	R	R			M		R							087LEP
GEO COMM PLAT XFER			R	M	R	M	R	R			M		R							096STM
SOC-SP OPS CENTER			R	M	R	M	R	R			M	M	R							097STM
POLAIRE 2			R	M	R	M	R	R			M		R							103LEP
USAF SP TST PROG 10	Y		R	M	R	M	R	R			M		R							117LEP
DEF MET SAT RETURN 8			R	M	R	M	R	R			M		R							132LEP
DEF MET SAT PROG 9			R	M	R	M	R	R			M		R							133LEP
TRANSIT 7			R	M	R	M	R	R			M		R							141LEP
EARTH OBS/COMMUN 1	A			M	R	M	R	R			M		R							323MDC
RESOURCES/POLLUTION	A			M	R	M	R	R			M		R							329MDC
RESOURCES/POLLUTION	A			M	R	M	R	R			M		R							341MDC
INMARSAT	A			M	R	M	R	R			M		R							351MDC
INMARSAT 1	A			M	R	M	R	R			M		R							352MDC
INMETSAT 6	A			M	R	M	R	R			M		R							363MDC
INMETSAT 7	A			M	R	M	R	R			M		R							364MDC
INMETSAT 8	A			M	R	M	R	R			M		R							365MDC

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SERVICING OPTIONS-1

SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A FMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
	* * * 90												* * *							
INTELSAT V 1	A			M	R	M	R	R			M		R							385MDC
INTELSAT V 2	A			M	R	M	R	R			M		R							386MDC
FOREIGN COMM/SBS 1	A			M	R	M	R	R			M		R							404MDC
FOREIGN COMM/SBS 2	A			M	R	M	R	R			M		R							405MDC
FOREIGN COMM/SBS 3	A			M	R	M	R	R			M		R							406MDC
FOREIGN COMM/SBS 4	A			M	R	M	R	R			M		R							407MDC
FOREIGN COMM/SBS 5	A			M	R	M	R	R			M		R							408MDC
US & FOREIGN COMM. 5	A			M	R	M	R	R			M		R							429MDC
US COMMUN. 6	A			M	R	M	R	R			M		R							438MDC
US COMMUN. 7	A			M	R	M	R	R			M		R							439MDC
US COMMUN. 8	A			M	R	M	R	R			M		R							440MDC
US COMMUN.11	A			M	R	M	R	R			M		R							442MDC
FOREIGN COMMUN 1	A			M	R	M	R	R			M		R							445MDC
GEO COMM PLAT STRUCT																				450STM

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SERVICING OPTIONS-3

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
GRO-GAMMA RAY OBSERV			R	M	R	M	R	R			M		R							009STM
AXAF-ADV X-RAY AST			R	M	R	M	R	R			M		R							012STM
CRO-COSMIC RAY OBS			R	M	R	M	R	R			M		R							015STM
ERBS-EARTH RAD BUD S			R	M	R	M	R	R			M		R							022STM
ENVIRON MONITOR 1			R	M	R	M	R	R			M		R							025LEP
LDEF 6			R	M	R	M	R	R			M	M	R							042STM
ADVANCED RELATIVITY			R	M	R	M	R	R			M		R							047LEP
ADVANCED RELATIVIT 1			R	M	R	M	R	R			M		R							048LEP
EARTH SURVEY 3			R	M	R	M	R	R			M		R							056LEP
OP EAR RES SAT B2			R	M	R	M	R	R			M		R							077LEP
SCADM SOL CYL&DYN			R	M	R	M	R	R			M		R							094STM
UNP PROG-URAN NEP PL			R	M	R	M	R	R			M		R							098STM
ALL WEATHER MICRO 2			R	M	R	M	R	R			M		R							105LEP
USAF SP TST PROG 11			R	M	R	M	R	R			M		R							118LEP
DEF MET SAT RETURN 4			R	M	R	M	R	R			M		R							126LEP
DEF MET SAT PROG 5			R	M	R	M	R	R			M		R							127LEP
TRANSIT 8			R	M	R	M	R	R			M		R							142LEP
RESOURCES/POLLUTION	A			M	R	M	R	R			M		R							330MDC
MAP GRAVITY FIELD/CO	A			M	R	M	R	R			M		R							332MDC
RESOURCES/POLLUTION	A			M	R	M	R	R			M		R							337MDC
RESOUR POLLUTION	A			M	R	M	R	R			M		R							338MDC
FOR.COMMUN/EARTH OBS	A			M	R	M	R	R			M		R							355MDC
INMETSAT 9	A			M	R	M	R	R			M		R							366MDC
INMETSAT 10	A			M	R	M	R	R			M		R							367MDC
INMETSAT 11	A			M	R	M	R	R			M		R							368MDC
INMETSAT 12	A			M	R	M	R	R			M		R							369MDC

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
FOREIGN COMM/EAR.OBS	A			M	R	M	R	R			M		R							370MDC
FOR.COMM/EARTH OBS.	A			M	R	M	R	R			M		R							371MDC
FOREIGN COMM/SBS 1	A			M	R	M	R	R			M		R							409MDC
FOREIGN COMM/SBS 2	A			M	R	M	R	R			M		R							410MDC
FOREIGN COMM/SBS 3	A			M	R	M	R	R			M		R							411MDC
FOREIGN COMM/SBS 4	A			M	R	M	R	R			M		R							412MDC
FOREIGN COMM/SBS 5	A			M	R	M	R	R			M		R							413MDC
US & FOREIGN COMM. 6	A			M	R	M	R	R			M		R							430MDC
ELECTRONIC MAIL			R	M	R	M	R	R			M		R							449MDC
MAG FIELD SURV B MAI			R	M	R	M	R	R			M		R							614STM

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
LDEF RETURN 6				M	R	M	R	R												043STM
GL REG ATMOS MON 2	A			M	R	M	R	R			M		R							053LEP
UNP PROG-URAN NEP PL			R	M	R	M	R	R			M		R							063STM
ADV GEO SAT 2	A			M	R	M	R	R			M		R							069LEP
OP EAR RES RETURN 2			R	M	R	M	R													074LEP
OP EAR RES SAT C2			R	M	R	M	R	R			M		R							080LEP
NOSS-NAT. OCEAN SAT				M	R	M	R	R												084LEP
OP METEOR RETRVL			R	M	R	M	R	R			M		R							100STM
MANNED GEO SORTIE			R	M	R	M	R	R			M		R							101STM
PRI EARTH RES 2			R	M	R	M	R	R			M		R							107LEP
DEF MET SAT RETURN 9	A			M	R	M	R	R			M		R							134LEP
DEF MET SAT PROG 10	A			M	R	M	R	R			M		R							135LEP
TRANSIT 9	A			M	R	M	R	R			M		R							143LEP
TRANSIT 10	A			M	R	M	R	R			M		R							144LEP
PERSONAL COMM. DEMO	A			M	R	M	R	R			M		R							446MDC
SOLAR PWR SYS.TST.			R	M	R	M	R	R			M	M	R	M	R	M	M	M		455MDC
SUBMILLIM TELE			R	M	R	M	R	R			M	M	R	M						612STM
AMBIENT IR TELE			R	M	R	M	R	R			M	M	R							613STM

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SERVICING OPTIONS-I

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
EDUCATIONAL TV			R	M	R	M	R	R			M		R							448NDC
IR INTERFEROMETER			R	M	R	M	R	R			M		R							617STM
UNP PROG-URAN NEP PL			R	M	R	M	R	R			M		R							618STM
ASTEROID MULT RENDZ			R	M	R	M	R	R			M		R							619STM
LUNAR POLAR ORB			R	M	R	M	R	R			M		R							620STM
NR EARTH ASTER SAMPL			R	M	R	M	R	R			M		R							621STM
MAG FIELD SURV B RET				M	R	M	R	R												622STM

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
OP EAR RES SAT C			R	M	R	M	R	R			M		R							078LEP
NUCL.WST.DISP.																				454MLC
GRAV WAVE INTERFERON			R	M	R	M	R	R			M		R							623STM
MARS ADVANCED TECH			R	M	R	M	R	R			M		R							624STM
UNP PROG-URAN NEP PL			R	M	R	M	R	R			M		R							625STM
LUNAR LAND SAMP-RET			R	M	R	M	R	R			M		R							626STM

* * * COUNT OF 6 FOR 94

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
PERSONAL COMM. ADV.			R	M	R	M	R	R			M		R							447MDC
ORB.DP.SP.RLY.STAT.			R	M	R	M	R	R			M		R	M						453MDC
MOD.SERV.MISSION			R	M	R	M	R	R			M		R							456MDC
AUTO PLANET STAT-RES			R	M	R	M	R	R			M		R	M						615STM
MERC ORBIT & LAND			R	M	R	M	R	R			M		R							627STM
AUTO PLANET STATION			R	M	R	M	R	R			M		R							628STM
GANYMEDE LANDER			R	M	R	M	R	R			M		R							629STM
CLOSE SOLAR ORBITER			R	M	R	M	R	R			M		R							630STM

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
ODSRS-ORB DEP SP REL			R	M	R	M	R	R			M		R	M						631STM
ODSRS-ORB DEP SP REL			R	M	R	M	R	R			M		R	M						632STM
ODSRS-ORB DEP SP OTV			R	M	R	M	R	R			M		R	M						633STM
COSMIC-CON OPT MOD I		R	R	M	R	M	R	R			M		R	M						634STM
MARS ADV TECH(RETURN				M	R	M	R	R												635STM
NR EARTH ASTER(RETUR				M	R	M	R	R												636STM
AUTO PLANET STATION-		R	R	M	R	M	R	R			M		R	M						637STM

* * * COUNT OF 7 FOR 96

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
LG OPT UV TELESCOPE			R	M	R	M	R	R			M		R	M						638STM
COMET SAMPLE RETURN			R	M	R	M	R	R			M		R	M						639STM
VENUS LANDER			R	M	R	M	R	R			M		R	M						640STM
AUTO MOBILE LUNAR SU																				641STM

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SERVICING OPTIONS-1

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SATELLITE	DEPL EGY	DEPL UDK	DEPL RMS	EXAM EVA	EXAM RMS	EXAM MFF	EXAM UFF	RETV RMS	RETV MFF	RETV UFF	C/O EVA	RPR MFF	O-A RMS	C/O MFF	RPR UFF	O-S	C/O E/C	RPR MFF	PLT RMS	FILE NUMBER
GEOSTAT.COMM.PLAT.FC																				451MOC
100 M THIN APER TELE			R	M	R	M	R	R			M		R	M						61CSTM

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SERVICING OPTIONS-2

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SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
IRAS-IR ASTRO SAT-R																			044STM
IECM-IND ENV CONTAM																			203FAM
IECM-IND ENV CONTAM																			208FAM
FILE-FEAT IDENT LAND																			223FAM
IECM-IND ENV CONTAM																			225FAM
PORS TEST ART.																			227FAM

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SERVICING OPTIONS-2

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SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
SMM-SOLAR MAX RETURN																			119STM
IECM.GAS TEST ARTICL																			228FAM
TDRS-A																			250STM
INTELSAT F5																			251AVN
TELESAT E																			252AVN
SPAS-01 STS PALL SAT																			257AVN
DOD 82-1																			261AVN
SBS-C																			264AVN

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SERVICING OPTIONS-2

SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
	* * * 83		* * *																
LANDSAT D	M		R																
DEF MET SAT PROG 1										M		R							061STN
SBS-B																			120LEP
TDRS-B																			253AVN
INTELSAT B(F-6)																			254AVN
TELSAT F																			255AVN
SPACELAB-1 LONG MOD	M		R																256AVN
TDRS-C										M		R							258AVN
MEA-1	M		R																259AVN
OSTA-2(SEPS)	M		R							M		R							260AVN
INSAT-1A										M		R							263AVN
TDRS-D																			267AVN
SPACELAB-2	M		R																268AVN
DOD 83-1										M		R							269AVN
RCA-E																			270AVN
INSAT-1B																			274AVN
DOD 83-2																			275AVN
DOD 83-3																			277AVN
TEAL RUBY IR	M		R																278AVN
CHEM REL MODULE	M		R							M		R							554STP
										M		R							600STN

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SERVICING OPTIONS-2

SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
	* * * 84		* * *																
PALAPA B2																			202FAM
MPS-1 MATL PROCESSIN	M		R							M		R							262STM
SPACELAB-3 LONG MOD	M		R							M		R							272AVN
SYNCOM IV-1 LEASAT																			273AVN
MPS-2 MATL PROCESSIN	M		R							M		R							276AVN
TELESAT-G																			279AVN
PALAPA B/1																			280AVN
SPACELAB 4 LIFE SCI.	M		R							M		R							281AVN
ERBS-EARTH RAD BUDGT	M		R							M		R							282AVN
RCA-F																			283AVN
ARABSAT-A																			284AVN
OSS-2	M		R							M		R							285AVN
AT&T-1																			286AVN
AMPTE-ACT MAG PART E																			287STM
SYNCOM IV-2 LEASAT																			288AVN
ST-SPACE TELESCOPE	M		R							M		R							289STM
LDEF	M		R							M	M	R							290STM
PALAPA-B/2																			291AVN
AT&T-2																			292AVN
ARABSAT-B																			293AVN
SYNCOM IV-3 LEASAT																			294AVN
GALILEO ORBITER																			295STM
GALILEO PROBE																			296STM
OSTA-3	M		R							M		R							298AVN
INTELSAT-C																			300AVN
TELESAT-1																			301AVN

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SERVICING OPTIONS-2

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SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
RCA-G																			302AVN
SPACELAB-D1 BNFT	M		R							M		R							303AVN
LANDSAT D RETRIEVAL																			309AVN
SPACELAB-6(SOLAR TER	M		R							M		R							310AVN
DOD 84-1																			315AVN
OSTA-2(MEA-MAUS)	M		R							M		R							372FAM
NOAA-G	M		R							M		R							373FAM
DOD 85-1																			374FAM

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SERVICING OPTIONS-2

SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
	* * * 85		* * *																
DOD 85-7																			001FAN
DOD 85-8																			003FAN
GRO-GAMMA RAY OBSEV.	M		R							M		R							005STN
EUVE-EXT ULTRAVIOLET	M		R							M		R							017STN
LDEF RETRIEVAL																			033STN
COBE COSMC BKGND EXP	M		R							M		R							045STN
GRAVSAT A1																			066LEP
DEF MET SAT PROG 2																			121LEP
DEF MET SAT PROG 7																			129LEP
DOD 86-1																			155FAN
NASA FREE FLYER																			195FAN
REFLIGHT DPP																			196FAN
DOD 85-8																			197FAN
ISPM-SOLAR POLAR NAS																			198FAN
DOD 85-9																			201FAN
MAGSAT B																			219NAS
ISPM-SOLAR POLAR ESA																			271AVN
SPACELAB-5 ASTROPHYS	M		R							M		R							299AVN
MPS-3 MATL PROCESSIN	M		R							M		R							304AVN
SBS-D																			305AVN
PRC-1 PEOP REP CHINA																			306AVN
SYNCOM IV-4 LEASAT																			307AVN
OSS-3	M		R							M		R							312AVN
RCA-M																			313AVN
SPACELAB-7 EAR OBSV	M		R							M		R							314AVN
SYNCOM IV-5 LEASAT																			318AVN

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SERVICING OPTIONS-2

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SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
SPACELAB-8 MATL PROC	M		R							M		R							319AVN
INMARSAT																			348MDC
AT&T-3																			375FAM
INTELSAT-D																			376MDC
INTELSAT V																			377MDC
DOD 85-3																			387FAM
DOD 85-4																			388FAM
INTER COMET MISSION																			390STM
PEP-PWR EXT PKG	M		R							M		R							391STM
DOD 85-6																			414FAM
SPACELAB D4 (BMFT)	M		R							M		R							415FAM
TELESAT-H																			416MDC
OSS-4																			419PAM
OSTA-4																			420FAM
DOD 85-5																			421FAM
GRAVSAT A2																			431FAM
SPACELAB 10(LIFE SC)	M		R							M		R							432FAM
SIRE-SPACE IR	M		R																553STP
TALON GOLD LASER																			558STP
CHEM REL MODULE	M		R							M		R							604STM
LG DEPLOY ANTENNA	M		R				M		R	M		R							605STM
DOD 85-2																			613FAM

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SERVICING OPTIONS-2

SATELLITE	MAI EVA	NT MFF	* * * O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
ERBS-EARTH RAD BUD-R	M		R							M		R							019LEP
REGION H2O QUAL. MON																			023LEP
SCADM-SOL CYCEDYN	M		R							M		R							028LEP
UARS-UPPER ATMOS RES	M		R							M		R							030LEP
GRAVITY PROBE B	M		R							M		R							046LEP
NOSS-NAT. OCEAN SAT																			081LEP
NOSS-NAT. OCEAN SAT																			085LEP
SASP-SC & APP SP PLA																			093STM
DOD 86-5																			095FAM
TRANSIT 1																			136LEP
TRANSIT 2																			137LEP
DOD 86-6																			147FAM
DOD 86-7																			148FAM
DOD 86-8																			149FAM
DOD 86-9																			150FAM
DOD 86-10																			151FAM
DOD 86-11																			152FAM
NOAA I	M		R							M		R							154FAM
NOAA H	M		R							M		R							156FAM
REFLIGHT OPP.																			191FAM
REFLIGHT OPP																			192FAM
NASA FREE FLYER																			193FAM
EUVE-EXT ULTRAVIOLET																			194FAM
DOD 86-2																			204FAM
SPACELAB-16 SOLR PHY	M		R							M		R							205FAM
HI ENERGY EX																			206NAS

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SERVICING OPTIONS-2

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SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
OSS-5																			209FAM
SPACELAB-13 NATL SCI	M		R							M		R							210FAM
OSS-6																			212FAM
SPACELAB-9 ASTRPHYS	M		R							M		R							213FAM
MPS-4	M		R							M		R							214FAM
SPACELAB-11 PLASMA	M		R							M		R							216FAM
SPACELAB-15 LIFE SCI	M		R							M		R							217FAM
DOD 86-3																			218FAM
DOD 86-4																			220FAM
25 KW PW MOD	M	M	R	M	R		M	M	R	M	M	R	M	R		M	M	R	222NAS
PRC-2 PEOP REP CHINA																			316AVN
GLOBAL DISASTER COMN																			320MDC
GOES-GEOS OP ENV SAT	M		R							M		R							343STM
INMARSAT																			349MDC
INTELSAT E																			378MDC
INTELSAT F																			379MDC
X-RAY TIME EXP																			392STM
VENUS ORBIT IMG RAD																			393STM
30/20 GHZ ANT TRUNK																			394STM
SEPS-SOL ELECT PROP																			395STM
LG STRUCT CONSTR	M		R	M	R		M	M	R	M	M	R	M	R		M	R	R	396STM
ROMS-P																			555STP
SIRTF-IR TELE FAC	M	M	R							M	M	R							606STM
OPEN-ORIG PLASMA ETH																			607STM
SUBSAT FAC-FREE FLYE																			608STM

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SERVICING OPTIONS-2

SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
	* * * 87	* * *																	
GRO-GAMMA RAY OBS-RE	M		R							M		R							006STM
AXAF-ADV X-RAY ASTRO	M	M	R							M	M	R							010STM
CRO-COSMIC RAY OBSER	M	M	R							M	M	R							013STM
ERBS-EARTH RAD BUD	M		R							M		R							020LEP
LDEF RETURN 3										M		R							037LEP
TOPEX-TOPOG EXP																			051LEP
EARTH SURVEY 1																			054LEP
LANDSAT RETURN 2																			060LEP
SOIL MOISTURE	M		R							M		R							070LEP
SOLAR PROBE																			095STM
POLAIRE 1																			102LEP
ALL WEATHER MICRO 1																			104LEP
USAF SP TST PROG 7																			114LEP
DEF MET SAT RETURN 2																			122LEP
DEF MET SAT PROG 3																			123LEP
TRANSIT 3																			138LEP
GOES-H GEO ORB ENV S																			153STM
PLASMA TURB EXP																			211STM
COASTAL SAT.	M		R							M		R							226NAS
STORMSAT	M		R							M		R							321MDC
EARTH OBS/COMMUN 1																			322MDC
MAP GRAVITY FIELD/CO																			331MDC
RESOURCES/POLLUTION																			333MDC
FGR.COMMUN/EARTH OBS																			353MDC
INMETSAT																			356MDC
INTELSAT V																			380MDC

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SERVICING OPTIONS-2

SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
	* * * 57		* * *																
FOREIGN COMM/SBS																			397MDC
US & FOR. COMMUN 1																			425MDC
US & FOR. COMMUN 2																			426MDC
LASS-LG AREA STRUCT	M		R	M	R		M	R	R				M	R		M	M	R	556STP
MRV HIGH ALT.																			557STP
STARLAB TELESCOPE	M		R							M		R							609STM
SOLAR SOFT X-RAY	M		R							M		R							610STM

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SERVICING OPTIONS-2

SATELLITE	* * * 88 MAI EVA	NT MFF	* * * O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
GRO-GAMMA RAY OBSERV	M		R							M		R							007STM
V.BI-VERY LG BASE IN				M	R		M	M	R				M	R		M	M	R	026LEP
SPACELAB→IN HOLE	M	M	R							M	M	R							031STM
LDEF 4	M	M	R							M	M	R							038STM
ATMAS-ADV THERAL MAP	M		R							M		R							049STM
GL REG ATMOS MON 1																			052LEP
THERMOSAT 1																			064LEP
ADV GEO SAT 1																			068LEP
OP EARTH RES SAT A	M		R							M		R							071LEP
OP EAR RES RETURN A																			072LEP
NOSS-NAT. OCEAN SAT																			082LEP
THIN ROOT SYS CONN																			095STM
PRIV EARTH RES 1																			106LEP
USAF SP TST PROG 8																			115LEP
DEF MET SAT RETURN 7																			130LEP
DEF MET SAT PROG 8																			131LEP
TRANSIT 4																			139LEP
TRANSIT 5																			146LEP
RESOURCES/POLLUTION	M		R							M		R							328MDC
RESOURCES/POLLUTION	M		R							M		R							334MDC
EARTH OBS/COMMUN.	M		R							M		R							339MDC
RESOURCES/POLLUTION																			340MDC
MAG FIELD SURV B																			344STM
30/20 GHZ ANT CUST																			346STM
INMETSAT																			357MDC
INMETSAT 1																			358MDC

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SERVICING OPTIONS-2

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SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
INTELSAT V 1																			381MDC
INTELSAT V 2																			382MDC
FOR. COMM/SBS 1																			398MDC
FOR. COMM/SBS 2																			399MDC
FOR. COMM/SBS 3																			400MDC
FOR. COMM/SBS 4																			401MDC
US COMMUN. 1																			433MDC
US COMMUN. 2																			434MDC
US COMMUN. 3																			435MDC
US COMMUN. 4																			436MDC
US COMMUN. 5																			437MDC
SCI.APPLIC.PLATFORM	M	M	R	M	R					M	M	R	M	R					452MDC
LANAR-LG AREA MOD AR	M	M	R	M	R					M	M	R	M	R					611STM

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SERVICING OPTIONS-2

SATELLITE	* * * 89 MAI EVA	* * * NT NFF	O-A RMS	MAI NFF	NT UFF	O-S	MAI E/C	NT NFF	PLT RMS	RES EVA	PLY NFF	O-A RMS	RES NFF	PLY UFF	O-S	RES E/C	PLY NFF	PLT RMS	FILE NUMBER
ST-SPACE TELESCOPE	M	M	R							M	M	R							003STM
ENVIRON MONITOR																			024LEP
VLBI-VERY LG BASE IN																			027LEP
SCADM-SOL CYC&DYN R																			029LEP
LDEF RETURN 4																			039STM
LDEF 5	M	M	R							M	M	R							040STM
ICEX-ICE & CLIM EXP																			050LEP
EARTH SURVEY 2																			055LEP
OTV-ORBIT XFER VEH D	M		R							M		R							062STM
OP EAR RES SAT 2	M		R							M		R							073LEP
OP EAR RES SAT 8	M		R							M		R							075LEP
OP EAR RES REYURN 8																			076LEP
NOSS-NAT. OCEAN SAT																			083LEP
NOSS-NAT. OCEAN SAT																			086LEP
OP METEOROLOGY																			090STM
SATURN ORBIT(DUAL)																			091STM
SOLAR TERR OBS																			092STM
USAF SP TST PROG 9																			116LEP
DEF MET SAT RETURN 3																			124LEP
DEF MET SAT PROG 4																			125LEP
TRANSIT 6																			140LEP
EARTH OBS/COMMUN.																			325MDC
EARTH OBS/COMMUN.																			327MDC
RESOURCES/POLLUTION																			335MDC
RESOURCE/POLLUTION																			336MDC
ASTRONOMY AF(1)																			342MDC

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SERVICING OPTIONS-2

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SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
SOIL MOIST ASSMT																			345STM
OCEAN RES (SAR)																			347STM
MAG FLD SURV B-MAINT																			350STM
FOR.COMMUN/EARTH OBS																			354MDC
INMETSAT 2																			359MDC
INMETSAT 3																			360MDC
INMETSAT 4																			361MDC
INMETSAT 5																			362MDC
INTELSAT V 1																			383MDC
INTELSAT V 2																			384MDC
FOR. COMM/SBS 1																			402MDC
FOR. COMM/SBS 2																			403MDC
FOREIGN COMM.																			424MDC
US COMM&FOR. COMMUN.																			427MDC
US & FOREIGN COMM. 4																			428MDC
US COMMUN. 10																			441MDC
US COMMUN.12																			443MDC
US COMMUN. 15																			444MDC

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SERVICING OPTIONS-2

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SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
ST SPACE TELESCOPE	M		R							M		R							004STM
GRO-GAMMA RAY OBS R	M		R							M		R							008STM
AXAF-ADV X-RAY AST R	M		R							M		R							011STM
CRO-COSMIC RAY OBS R	M		R							M		R							014STM
LG SOLAR OBSER																			016LEP
ERBS-EARTH RAD BUD R																			021STM
LDEF RETURN 5																			041STM
THERMOSAT 2										M		R							065LEP
GRAVSAT A+B 2										M		R							067LEP
OP EAR RES RETURN C																			079LEP
NOSS-NAT. OCEAN SAT										M		R							087LEP
GEO COMM PLAT XFER																			096STM
SOC-SP OPS CENTER	M	M	R	M	R		M	M	R	M	M	R	M	R		M	M	R	097STM
POLAIRE 2										M		R							103LEP
USAF SP TST PROG 10										M		R							117LEP
DEF MET SAT RETURN 8										M		R							132LEP
DEF MET SAT PROG 9										M		R							133LEP
TRANSIT 7										M		R							141LEP
EARTH OBS/COMMUN 1										M		R							323MDC
RESOURCES/POLLUTION																			329MDC
RESOURCES/POLLUTION																			341MDC
INMARSAT																			351MDC
INMARSAT 1																			352MDC
INMETSAT 6																			363MDC
INMETSAT 7																			364MDC
INMETSAT 8																			365MDC

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SERVICING OPTIONS-2

SATELLITE	* * * 90 MAI EVA	* * * NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
INTELSAT V 1																			385MDC
INTELSAT V 2																			386MDC
FOREIGN COMM/SBS 1																			404MDC
FOREIGN COMM/SBS 2																			405MDC
FOREIGN COMM/SBS 3																			406MDC
FOREIGN COMM/SBS 4																			407MDC
FOREIGN COMM/SBS 5																			408MDC
US & FOREIGN COMM. 5																			429MDC
US COMMUN. 6																			438MDC
US COMMUN. 7																			439MDC
US COMMUN. 8																			440MDC
US COMMUN.11																			442MDC
FOREIGN COMMUN 1																			445MDC
GEO COMM PLAT STRUCT																			450STM

* * * COUNT OF 40 FOR 90

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SERVICING OPTIONS-2

* * * 91 * * *

SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
GRO-GAMMA RAY OBSERV	M		R							M		R							009STM
AXAF-ADV X-RAY AST	M	M	R							M	M	R							012STM
CRO-COSMIC RAY OBS	M	M	R							M	M	R							015STM
ERBS-EARTH RAD BUD S	M		R							M		R							022STM
ENVIRON MONITOR 1	M		R							M		R							025LEP
LDEF 6	M	M	R							M	M	R							042STM
ADVANCED RELATIVITY																			047LEP
ADVANCED RELATIVIT 1																			048LEP
EARTH SURVEY 3																			056LEP
OP EAR RES SAT B2																			077LEP
SCADM SOL CYLEDYN	M		R							M		R							094STM
UNP PROG-URAN NEP PL																			098STM
ALL WEATHER MICRO 2																			105LEP
USAF SP TST PROG 11																			118LEP
DEF MET SAT RETURN 4																			126LEP
DEF MET SAT PROG 5																			127LEP
TRANSIT E																			142LEP
RESOURCES/POLLUTION																			330MDC
MAP GRAVITY FIELD/CO																			332MDC
RESOURCES/POLLUTION																			337MDC
RESOUR POLLUTION																			338MDC
FOR.COMMUN/EARTH OBS																			355MDC
INMETSAT 9																			366MDC
INMETSAT 10																			367MDC
INMETSAT 11																			368MDC
INMETSAT 12																			369MDC

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SERVICING OPTIONS-2

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SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
FOREIGN COMM/EAR.OBS	M		R							M		R							370MDC
FOR.COMM/EARTH OBS.	M		R							M		R							371MDC
FOREIGN COMM/SBS 1																			409MDC
FOREIGN COMM/SBS 2																			410MDC
FOREIGN COMM/SBS 3																			411MDC
FOREIGN COMM/SBS 4																			412MDC
FOREIGN COMM/SBS 5																			413MDC
US & FOREIGN COMM. 6																			430MDC
ELECTRONIC MAIL	M		R							M		R							449MDC
MAG FIELD SURV B MAI																			614STM

* * * COUNT OF 36 FOR 91

SERVICING OPTIONS-2

SATELLITE * * * 92	MAI EVA	NT MFF * * *	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
LDEF RETURN 6																			043STM
G. REG ATMOS MON 2																			053LEP
UNP PROG-URAN NEP PL																			063STM
ADV GEO SAT 2																			069LEP
OP EAR RES RETURN 2																			074LEP
OP EAR RES SAT C2	M		R							M		R							080LEP
NOSS-NAT. OCEAN SAT																			084LEP
OP METEOR RETRVL																			100STM
MANNED GEO SORTIE																			101STM
PRI EARTH RES 2	M		R							M		R							107LEP
DEF MET SAT RETURN 9																			134LEP
DEF MET SAT PROG 10																			135LEP
TRANSIT 9																			143LEP
TRANSIT 10																			144LEP
PERSONAL COMM. DEMO																			446MDC
SOLAR PWR SYS.TST.	M	M	R	M	R		M	M	R	M	M	R	M	R	M	M	R		455MDC
SUBMILLIM TELE	M	M	R	M						M	M	R	M						612STM
AMBIENT IR TELE	M	M	R							M	M	R							613STM

* * * COUNT OF 18 FOR 92

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SERVICING OPTIONS-2

* * * 93 * * *

SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
EDUCATIONAL TV																			448MDC
IR INTERFEROMETER																			617STM
UNP PROG-URAN NEP PL																			618STM
ASTEROID MULT RENDZ																			619STM
LUNAR POLAR ORB																			620STM
NR EARTH ASTER SAMPL																			621STM
MAG FIELD SURV B RET																			622STM

* * * COUNT OF 7 FOR 93

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SERVICING OPTIONS-2

SATELLITE * * * 94	MAI EVA	NT MFF * * *	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
OP EAR RES SAT C																			078LEP
NUCL.WST.DISP.																			454MDC
GRAV WAVE INTERFEROM																			623STM
MARS ADVANCED TECH																			624STM
UNP PROG-URAN NEP PL																			625STM
LUNAR LAND SAMP-RET																			626STM

* * * COUNT OF 6 FOR 94

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SERVICING OPTIONS-2

SATELLITE	* * * 95	MAI EVA	* * * NT NFF	O-A RMS	MAI NFF	NT UFF	O-S	MAI E/C	NT NFF	PLT RMS	RES EVA	PLY NFF	O-A RMS	RES NFF	PLY UFF	O-S	RES E/C	PLY NFF	PLT RMS	FILE NUMBER
PERSONAL COMM. ADV.																				447MDC
ORB.DP.SP.R_Y.STAT.																				453MDC
MOD.SERV.MISSION																				456MDC
AUTO PLANET STAT-RES																				615STM
MERC ORBIT & LAND																				627STM
AUTO PLANET STATION																				628STM
GANYMEDE LANDER																				629STM
CLOSE SOLAR ORBITER																				630STM

* * * COUNT OF 8 FOR 95

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SERVICING OPTIONS-2

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SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
ODSRS-ORE DEP SP REL																			631STN
ODSRS-ORE DEP SP REL																			632STN
ODSRS-ORE DEP SP OTV																			633STN
COSMIC-CON OPT MOD I																			634STN
MARS ADV TECH(RETURN																			635STN
NR EARTH ASTER(RETUR																			636STN
AUTO PLANET STATION-																			637STN

* * * COUNT OF 7 FOR 96

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SERVICING OPTIONS-2

SATELLITE	* * * 97 MAI EVA	NT MFF	* * * O-A RMS	RAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
LG OPT UV TELESCOPE																			638STM
COMET SAMPLE RETURN																			639STM
VENUS LANDER																			640STM
AUTO MOBILE LUNAR SU																			641STM

* * * COUNT OF 4 FOR 97

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SERVICING OPTIONS-2

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SATELLITE	MAI EVA	NT MFF	O-A RMS	MAI MFF	NT UFF	O-S	MAI E/C	NT MFF	PLT RMS	RES EVA	PLY MFF	O-A RMS	RES MFF	PLY UFF	O-S	RES E/C	PLY MFF	PLT RMS	FILE NUMBER
GEOSTAT.COMM.PLAT.FC																			
100 M THIN APER TELE																			451NDC
																			616STN

* * * COUNT OF 2 FOR 98

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SERVICING OPTIONS-3 * * * 81

SATELLITE	REC EVA	FIG NFF	* * * D-A RMS	REC XFF	FIG UFF	O-S	REC E/C	FIG NFF	PLT RMS	ER EVA	ORB XFF	ORB RMS	ER EVA	PRO NFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
												R							044STM
IRAS-IR ASTRO SAT-R												R							203FAM
IECM-IND ENV CONTAM												R							208FAM
IECM-IND ENV CONTAM																			223FAM
FILE-FEAT IDENT LAND												R							225FAM
IECM-IND ENV CONTAM												R							227FAM
PDRS TEST ART.																			

* * * COUNT OF 6 FOR 81

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SERVICING OPTIONS-3

* * * 82 * * *

SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RNT	FILE NUMBER
SMM-SOLAR MAX RETURN												R							119STM
IECM, GAS TEST ARTICL												R							228FAM
TDRS-A												R							250STM
INTELSAT F5												R							251AVN
TELESAT E												R							252AVN
SPAS-01 STS PALL SAT																			257AVN
DOD 82-1																			261AVN
SDS-C												R							264AVN

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SERVICING OPTIONS-3

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
LANDSAT D	M		R							R		R							061STM
DEF NET SAT PROG 1																			120LEP
SBS-B												R							253AVN
TDRS-B												R							254AVN
INTELSAT B(F-6)												R							255AVN
TELSAT F												R							256AVN
SPACELAB-1 LONG MOD	M		R									R							258AVN
TDRS-C												R							259AVN
MEA-1	M		R																260AVN
OSTA-2(SEPS)	M		R									R							263AVN
INSAT-1A												R							267AVN
TDRS-D												R							268AVN
SPACELAB-2	M		R																269AVN
DOD 83-1																			270AVN
RCA-E												R							274AVN
INSAT-1B												R							275AVN
DOD 83-2																			277AVN
DOD 83-3																			278AVN
TEAL RUBY IR												R							554STP
CHEM REL MODULE	M		R							M		R							600STM

* * * COUNT OF 20 FOR 83

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SERVICING OPTIONS-3

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
PALAPA B2												R							202FAM
MPS-1 MATL PROCESSIN	M		R																262STM
SPACELAB-3 LONG MOD	M		R																272AVN
SYNCOM IV-1 LEASAT												R							273AVN
MPS-2 MATL PROCESSIN	M		R																276AVN
TELESAT-G												R							279AVN
PALAPA B/1												R							280AVN
SPACELAB 4 LIFE SCI.	M		R																281AVN
ERBS-EARTH RAD BUDGT	M		R							M		R							282AVN
RCA-F												R							283AVN
ARABSAT-A												R							284AVN
OSS-2	M		R									R							285AVN
AT&T-1												R							286AVN
AMPTE-ACT MAG PART E												R							287STM
SYNCOM IV-2 LEASAT												R							288AVN
ST-SPACE TELESCOPE	M		R							M		R							289STM
LDEF	M		R							M		R							290STM
PALAPA-B/2												R							291AVN
AT&T-2												R							292AVN
ARABSAT-B												R							293AVN
SYNCOM IV-3 LEASAT												R							294AVN
GALILEO ORBITER												R							295STM
GALILEO PROBE												R							296STM
OSTA-3	M		R							M		R							298AVN
INTELSAT-C												R							300AVN
TELESAT-1												R							301AVN

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SERVICING OPTIONS-3

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
RCA-G																			
SPACELAB-01 BMFT	M		R									R							302AVN
LANDSAT D RETRIEVAL	M		R																303AVN
SPACELAB-6(SOLAR TER	M		R							M		R							309AVN
DOD 84-1												R							310AVN
OSTA-2(MEA-MAUS)	M		R																315AVN
NOAA-G	M		R									R							372FAM
DOD A[illegible]-1										M		R							373FAM
																			374FAM

* * * COUNT OF 34 FOR 84

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SERVICING OPTIONS-3

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRC MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
DOD 85-7																			001FAM
DOD 85-8																			002FAM
GRO-GAMMA RAY OBSEV.	M		R							M		R							005STM
EUVE-EXT ULTRAVIOLET										M		R							017STM
LDEF RETRIEVAL	M		R							M		R							033STM
COBE COSMC BKGND EXP	M		R									R							045STM
GRAVSAT A1												R							066LEP
DEF MET SAT PROG 2																			121LEP
DEF MET SAT PROG 7																			129LEP
DOD 86-1																			155FAM
NASA FREE FLYER																			195FAM
REF_IGHT J??																			196FAM
DOD 85-8																			197FAM
ISPM-SOLAR POLAR NAS												R							198FAM
DOD 85-9																			201FAM
MAGSAT B												R							219NAS
ISPM-SOLAR POLAR ESA												R							271AVN
SPACELAB-5 ASTROPHYS	M		R																299AVN
MPS-3 MATL PROCESSIN	M		R																304AVN
SBS-D												R							305AVN
PRC-1 PEOP REP CHINA												R							306AVN
SYNCOM IV-4 LEASAT												R							307AVN
OSS-3	M		R									R							312AVN
RCA-H												R							313AVN
SPACELAB-7 EAR OBSV	M		R																314AVN
SYNCOM IV-5 LEASAT												R							318AVN

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRC MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
SPACELAB-8 MATL PROC	M		R																319AVN
INMARSAT												R							348MDC
AT&T-3												R							375FAM
INTELSAT-D												R							376MDC
INTELSAT V												R							377MDC
DOD 85-3																			387FAM
DOD 85-4																			388FAM
INTER COMET MISSION												R							390STM
PEP-PWR EXT PKG												R							391STM
DOD 85-6																			414FAM
SPACELAB D4 (BMFT)	M		R																415FAM
TELSSAT-F												R							416MDC
OSS-4												R							419FAM
OSTA-4												R							420FAM
DOD 85-5																			421FAM
GRAVSAT A2												R							431FAM
SPACELAB 10(LIFE SC)	M		R																432FAM
SIRE-SPACE IR												R							553STP
TALON GOLD LASER												R							558STP
CHEM REL MODULE	M		R							M		R							604STM
LG DEPLOY ANTENNA	M	M	R	M	R		M	R	R							M	R		605STM
DOD 85-2																			613FAM

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
ERBS-EARTH RAD BUD-R	M		R							M		R							019LEP
REGION H2O QUAL. MON												R							023LEP
SCADM-SOL CYCDYN	M		R							M		R							028LEP
UARS-UPPER ATMOS RES	M		R							M		R							030LEP
GRAVITY PROBE B	M		R							M		R							046LEP
NOSS-NAT. OCEAN SAT										M		R							081LEP
NOSS-NAT. OCEAN SAT										M		R							085LEP
SASP-SC & APP SP PLA																			093STM
DOD 86-5																			095FAM
TRANSIT 1																			136LEP
TRANSIT 2																			137LEP
DOD 86-6																			147FAM
DOD 86-7																			148FAM
DOD 86-8																			149FAM
DOD 86-9																			150FAM
DOD 86-10																			151FAM
DOD 86-11																			152FAM
NOAA I	M		R							M		R							154FAM
NOAA H	M		R							M		M							156FAM
REFLIGHT OPP.																			191FAM
REFLIGHT OPP																			192FAM
NASA FREE FLYER																			193FAM
EUVE-EXT ULTRAVIOLET												R							194FAM
DOD 86-2																			204FAM
SPACELAB-16 SOLR PHY	M		R																205FAM
HI ENERGY EX																			206NAS

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
OSS-5																			209FAM
SPACELAB-13 MATL SCI	M		R							M		R							210FAM
OSS-6																			212FAM
SPACELAB-9 ASTRPHYS	M		R																213FAM
MPS-4	M		R																214FAM
SPACELAB-11 PLASMA	M		R																216FAM
SPACELAB-15 LIFE SCI	M		R																217FAM
DOD 86-3																			218FAM
DOD 86-4																			220FAM
25 KW PW MOD	M	M	R													M	R		222NAS
PRC-2 PEOP REP CHINA												R							316AVN
GLOBAL DISASTER COMN												R							320MDC
GOES-GEOS OP ENV SAT										M		R							343STM
INMARSAT												R							349MDC
INTELSAT E												R							378MDC
INTELSAT F												R							379MDC
X-RAY TIME EXP												R							392STM
VENUS ORBIT IMG RAD												R							393STM
30/20 GHZ ANT TRUNK												R							394STM
SEPS-SOL ELECT PROP												R							395STM
LG STRUCT CONSTR	M	M	R	M	R		M	M	R					M		M	R		396STM
ROMS-P																			555STM
SIRTF-IR TELE FAC																			606STM
OPEN-ORIG PLASMA ETH												R							607STM
SUBSAT FAC-FREE FLYE										R		R							608STM

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SATELLITE	REC EVA	FIG NFF	O-A RMS	REC NFF	FIG UFF	O-S	REC E/C	FIG NFF	PLT RMS	ER EVA	ORB NFF	ORB RMS	ER EVA	PRO NFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
GRO-GAMMA RAY OBS-RE	M		R							M		R							006STM
AXAF-ADV X-RAY ASTRO	M	M	R	M	R					M		R							010STM
GRO-COSMIC RAY OBSER	M	M	R	M	R					M		R							013STM
ERBS-EARTH RAD BUD	M		R							M		R							020LEP
LDEF RETURN 3	M		R							M		R							037LEP
TOPEX-TOPOG EXP												R							051LEP
EARTH SURVEY 1												R							054LEP
LANDSAT RETURN 2												R							060LEP
SOIL MOISTURE	M		R							M		R							070LEP
SOLAR PROBE																			095STM
POLAIRE 1												R							102LEP
ALL WEATHER MICRO 1												R							104LEP
USAF SP TST PROG 7												R							114LEP
DEF MET SAT RETURN 2																			122LEP
DEF MET SAT PROG 3																			123LEP
TRANSIT 3																			133LEP
GOES-H GEO ORB ENV S												R							153STM
PLASMA TURB EXP																			211STM
COASTAL SAT.	M		R							M		R							226NAS
STORMSAT	M		R							M		R							321MDC
EARTH OBS/COMMUN 1												R							322MDC
MAP GRAVITY FIELD/CO												R							331MDC
RESOURCES/POLLUTION												R							333MDC
FOR.COMMUN/EARTH OBS												R							353MDC
INMETSAT												R							356MDC
INTELSAT V												R							380MDC

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SATELLITE	REC EVA	FIG MFF	O-A DMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
FOREIGN COMM/SBS												R							397MDC
US & FOR. COMMUN 1												R							425MDC
US & FOR. COMMUN 2												R							426MDC
LASS-LG AREA STRUCT	M	M	R	M	R		M	M	R					M	R	M	R		556STP
MRV HIGH ALT.																			557STP
STARLAB TELESCOPE	M		R							M		R							609STM
SOLAR SOFT X-RAY	M		R							M		R							610STM

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SATELLITE	REC EVA	FIG MFF	D-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
GRO-GAMMA RAY OBSERV	M		R							M		R							007STM
VLBI-VERY LG BASE IN	M		R	M	R		M	M	R					M	R	M	R		026LEP
SPACELAB-PIN HOLE	M		R									R							031STM
LDEF 4	M	M	R							M		R							038STM
ATMAS-ADV THERAL MAP	M		R							M		R							049STM
GL REG ATMOS MON 1												R							052LEP
THERMOSAT 1												R							064LEP
ADV GEO SAT 1												R							068LEP
OP EARTH RES SAT A	M		R							M		R							071LEP
OP E/. RES RETURN A												R							072LEP
NOSS NAT. OCEAN SAT												R							082LEP
THIN ROOT SYS COMM												R							099STM
PRIV EARTH RES 1	M		R							M		R							106LEP
USAF SP TST PROG 8																			115LEP
DEF MET SAT RETURN 7																			130LEP
DEF MET SAT PROG 8																			131LEP
TRANSIT 4																			139LEP
TRANSIT 5																			146LEP
RESOURCES/POLLUTION	M		R							M		R							328MDC
RESOURCES/POLLUTION	M		R							M		R							334MDC
EARTH OBS/COMMUN.	M		R							M		R							339MDC
RESOURCES/POLLUTION												R							340MDC
MAG FIELD SURV 8												R							344STM
30/20 GHZ ANT CUST												R							346STM
INMETSAT												R							357MDC
INMETSAT 1												R							358MDC

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
												R							381MDC
INTELSAT V 1												R							382MDC
INTELSAT V 2												R							398MDC
FOR. COMM/SBS 1												R							399MDC
FOR. COMM/SBS 2												R							400MDC
FOR. COMM/SBS 3												R							401MDC
FOR. COMM/SBS 4												R							433MDC
US COMMUN. 1												R							434MDC
US COMMUN. 2												R							435MDC
US COMMUN. 3												R							436MDC
US COMMUN. 4												R							437MDC
US COMMUN. 5														M	R	M	R		452MDC
SCI.APPLIC.PLATFORM	M	M	R	M	R									M	R	M	R		611STM
LANAR-LG AREA MOD AR	M	M	R	M	R														

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RXT	FILE NUMBER
ST-SPACE TELESCOPE	M		R							M		R							003STM
ENVIRON MONITOR												R							024LEP
VLBI-VERY LG BASE IN												R							027LEP
SCADM-SOL CYC&DYN R	M		R					M		M		R							029LEP
LDEF RETURN 4	M		R							M		R							039STM
LDEF 5								M		M		R							040STM
ICEX-ICE & CLIM EXP										M		R							050LEP
EARTH SURVEY 2												R							055LEP
OTV-ORBIT XFER VEH D	M		R							M		R							062STM
OP EAR RES SAT 2	M		R							M		R							073LEP
OP EAR RES SAT B	M		R							M		R							075LEP
OP EAR RES RETURN B	M		R							M		R							076LEP
NOSS-NAT. OCEAN SAT	M		R									R							083LEP
NOSS-NAT. OCEAN SAT												R							086LEP
UP METEOROLOGY												R							090STM
SATURN ORBIT(DUAL)												R							091STM
SOLAR TERR OBS												R							092STM
USAF SP TST PROG 9												R							116LEP
DEF MET SAT RETURN 3												R							124LEP
DEF MET SAT PROG 4												R							125LEP
TRANSIT 6												R							140LEP
EARTH OBS/COMMUN.												R							325MDC
EARTH OBS/COMMUN.												R							327MDC
RESOURCES/POLLUTION												R							335MDC
RESOURCE/POLLUTION												R							336MDC
ASTRONOMY AF(1)												R							342MDC

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SATELLITE	REC EVA	FIG MFF	* * * O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
SOIL MOIST ASSMT												R							345STM
OCEAN RES (SAR)												R							347STM
MAG FLD SURV B-MAINT												R							350STM
FOR.COMMUN/EARTH OBS												R							354MDC
INMETSAT 2												R							359MDC
INMETSAT 3												R							360MDC
INMETSAT 4												R							361MDC
INMETSAT 5												R							362MDC
INTELSAT V 1												R							383MDC
INTELSAT V 2												R							384MDC
FOR. COMM/SBS 1												R							402MDC
FOR. COMM/SBS 2												R							403MDC
FOREIGN COMM.												R							424MDC
US COMM&FOR. COMMUN.												R							427MDC
US & FOREIGN COMM. 4												R							428MDC
US COMMUN. 10												R							441MDC
US COMMUN.12												R							443MDC
US COMMUN. 15												R							444MDC

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SATELLITE	REC EVA	FIG MFF	* * * G-A RMS	REC MFF	FIG UFF	D-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
* * * 90																			
ST SPACE TELESCOPE	M		R							M		R							004STM
GRO-GAMMA RAY OBS R	M		R							M		R							008STM
AXAF-ADV X-RAY AST R	M		R							M		R							011STM
CRO-COSMIC RAY OBS R	M		R							M		R							014STM
LG SOLAR OBSER												R							016LEP
ERBS-EARTH RAD BUD R	M		R							M		R							021STM
LDEF RETURN 5	M		R							M		R							041STM
THERMOSAT 2												R							065LEP
GRAVSAT A,B 2												R							067LEP
DP EAR RES RETURN C	M		R							M		R							079LEP
NOSS-NAT. OCEAN SAT												R							087LEP
GEO COMM PLAT XFER												R							096STM
SDC-SP OPS CENTER												R		M	R	M	M		097STM
POLAIRE 2	M		R									R							103LEP
USAF SP TST PROG 10	M		R									R							117LEP
DEF MET SAT RETURN 8	M		R									R							132LEP
DEF MET SAT PROG 9	M		R									R							133LEP
TRANSIT 7	M		R									R							141LEP
EARTH OBS/COMMUN 1	M		R									R							323MDC
RESOURCES/POLLUTION												R							325MDC
RESOURCES/POLLUTION												R							341MDC
INMARSAT												R							351MDC
INMARSAT 1												R							352MDC
INMETSAT 6												R							3[illegible]MDC
INMETSAT 7												R							364MDC
INMETSAT 8												R							365MDC

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
INTELSAT V 1												R							385MDC
INTELSAT V 2												R							386MDC
FOREIGN COMM/SBS 1												R							404MDC
FOREIGN COMM/SBS 2												R							405MDC
FOREIGN COMM/SBS 3												R							406MDC
FOREIGN COMM/SBS 4												R							407MDC
FOREIGN COMM/SBS 5												R							408MDC
US & FOREIGN COMM. 5												R							429MDC
US COMMUN. 6												R							438MDC
US COMMUN. 7												R							439MDC
US COMMUN. 8												R							440MDC
US COMMUN.11												R							442MDC
FOREIGN COMMUN 1												R							445MDC
GEO COMM PLAT STRUCT												R							450STM

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SATELLITE	REC EVA	FIG MFF	* * * O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RNT	FILE NUMBER
GRO-GAMMA RAY OBSERV	M		R							M		R							009STM
AXAF-ADV X-RAY AST	M	M	R							M		R							012STM
GRO-COSMIC RAY OBS	M	M	R							M		R							015STM
ERBS-EARTH RAD BUD S	M		R							M		R							022STM
ENVIRON MONITOR 1	M		R									R							025LEP
LDEF 6	M	M	R							M		R							042STM
ADVANCED RELATIVITY	M		R									R							047LEP
ADVANCED RELATIVIT 1	M		R									R							048LEP
EARTH SURVEY 3	M		R									R							056LEP
OP EAR RES SAT B2	M		R									R							077LEP
SCADM SOL CYLEDYN	M		R							M		R							094STM
UNP PROG-URAN NEP PL												R							098STM
ALL WEATHER MICRO 2	M		R									R							105LEP
USAF SP TST PROG 11												R							118LEP
DEF MET SAT RETURN 4												R							126LEP
DEF MET SAT PROG 5												R							127LEP
TRANSIT 8												R							142LEP
RESOURCES/POLLUTION												R							330MDC
MAP GRAVITY FIELD/CO												R							332MDC
RESOURCES/POLLUTION												R							337MDC
RESOUR POLLUTION												R							338MDC
FOR.COMMUN/EARTH OBS												R							355MDC
INMETSAT 9												R							366MDC
INMETSAT 10												R							367MDC
INMETSAT 11												R							368MDC
INMETSAT 12												R							369MDC

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
FOREIGN COMM/EAR.OBS	M		R							M		R							370MDC
FOR.COMM/EARTH OBS.	M		R							M		R							371MDC
FOREIGN COMM/SBS 1												R							409MDC
FOREIGN COMM/SBS 2												R							410MDC
FOREIGN COMM/SBS 3												R							411MDC
FOREIGN COMM/SBS 4												R							412MDC
FOREIGN COMM/SBS 5												R							413MDC
US & FOREIGN COMM. 6												R							430MDC
ELECTRONIC MAIL	M		R									R							449MDC
MAG FIELD SURV B MAI												R							614STM

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	DRB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
LDEF RETURN 6	M		R							M		R							043STM
GL REG ATMOS MON 2												R							053LEP
UNP PROG-URAN NEP PL												R							063STM
ADV GEO SAT 2												R							069LEP
OP EAR RES RETURN 2												R							074LEP
OP EAR RES SAT C2	M		R									R							080LEP
NOSS-NAT. OCEAN SAT												R							084LEP
OP METEOR RETRVL												R							100STM
MANNED GEO SORTIE												R							101STM
PRI EARTH RES 2	M		R									R							107LEP
DEF MET SAT RETURN 9												R							134LEP
DEF MET SAT PROG 10												R							135LEP
TRANSIT 5												R							143LEP
TRANSIT 10												R							144LEP
PERSONAL COMM. DEMO												R							446MDC
SOLAR PWR SYS.TST.	M	M	R	M	R	M	M	R						R	M	R			455MDC
SUBMILLIM TELE	M	M	R	M								R							612STM
AMBIENT IR TELE	M	M	R									R							613STM

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
EDUCATIONAL TV												R							448MDC
IR INTERFEROMETER												R							617STM
UNP PROG-URAN NEP PL												R							618STM
ASTEROID MULT RENDZ												R							619STM
LUNAR POLAR ORB												R							620STM
NR EARTH ASTER SAMPL												R							621STM
MAG FIELD SURV B RET												R							622STM

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SATELLITE	REC EVA	FIG MFF	G-A RMS	REC MFF	FIG UFF	U-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORJ MFF	ORJ RMS	ER EVA	PRG MFF	ORJ RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
OP EAR RES SAT C												R							078LEP
NUCL.&ST.DISP.																			454MDC
GRAV WAVE INTERFERON M			R							M		R							623STM
MARS ADVANCED TECH												R							624STM
UNP PROG-URAN NEP PL												R							625STM
LUNAR LAND SAMP-RET												R							626STM

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRG MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
PERSONAL COMM. ADV.												R							447MDC
ORB.OP.SP.RLY.STAT.												R							453MDC
MOD.SERV.MISSION												R							456MDC
AUTO PLANET STAT-RES												R							615STM
MERC ORBIT & LAND												R							627STM
AUTO PLANET STATION																			628STM
GANYMEDE LANDER																			629STM
CLOSE SOLAR ORBITER																			630STM

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SERVICING OPTIONS-3

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SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	U-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
ODSRS-ORE DEP SP REL												R							631STM
ODSRS-ORE DEP SP REL												R							632STM
ODSRS-ORB DEP SP UTV												R							633STM
COSMIC-CON SPT MOD I												R							634STM
MARS ADV TECH(RETURN												R							635STM
NR EARTH ASTER(RETUR												R							636STM
AUTO PLANET STATION-												R							637STM

* * * COUNT OF 7 FOR 96

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SERVICING OPTIONS-3

* * * 97 * * *

SATELLITE	REC EVA	FIG MFF	O-A RMS	REC MFF	FIG UFF	O-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
LG OPT UV TELESCOPE												R							638STM
COMET SAMPLE RETURN												R							639STM
VENUS LANDER												R							640STM
AUTO MOBILE LUNAR SU																			641STM

* * * COUNT OF 4 FOR 97

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SERVICING OPTIONS-3

SATELLITE	* * * 98 REC EVA	* * * FIG MFF	G-A RMS	REC MFF	FIG UFF	U-S	REC E/C	FIG MFF	PLT RMS	ER EVA	ORB MFF	ORB RMS	ER EVA	PRO MFF	ORB RMS	ER E/C	PRO UFF	RMT	FILE NUMBER
GEOSTAT.CONN.PLAT.FC												R							451MDC
100 M THIN APER TELE												R							616STM

* * * COUNT OF 2 FOR 98

APPENDIX D
SATELLITE USER
MODEL UPDATE

APPENDIX D

SATELLITE USER MODEL UPDATE

As a consequence of developing the Satellite and Services User Model (S/SUM) reported in Volume 2, an update of the baseline Satellite User Model (SUM) of Appendix A was performed to make it consistent with the S/SUM.

The baseline SUM was modified to delete "softly-defined" satellite programs (those which could not be better substantiated) and to add satellite launchings assumed for later time frames. New launchings were slotted for the late 80's and 90's time frames based on the observations that, for many satellite programs, the operations were to extend over a limited period. Although not noted in the current plan, continuing investigations might be warranted.

For example, the Advanced X-Ray Astronomical Facility (AXAF) was identified as a satellite to be launched in 1987, revisited at yearly intervals, and returned to earth in 1990 for refurbishment and reconfiguration. The program did not identify plans beyond that point. The "advocacy position", taken in developing the S/SUM, assumed that the satellite would be relaunched in 1991 to continue scientific investigations and maintained on-orbit for another five years. The second AXAF launching was then added to the baseline SUM and is reflected in this appendix.

The updated SUM is shown on pages D-3 thru D-41 using a format similar to that presented in Appendix A. Each satellite listing includes the following pertinent information:

- SAT. NO. - Satellite number as referenced in NASA OAST Space System Technology Model, May 1980
- SPONSORING ORGANIZATION - Refers to NASA Program Office, Military, Foreign, or Private sources
- CATEGORY - A (Approved) - Missions which have been authorized for implementation
  - CATEGORY P (Planned) - Missions designated as possible new starts within the next 5 years

- C (Candidate) - Missions considered for possible initiation within 10 years

- O (Opportunity) - Potential missions for start beyond ten years and/or those missions of a speculative nature.

SPACECRAFT (S/C) CHARACTERISTICS

- Mass (Kilograms)
- Length (Meters)
- Diameter (Meters)
- Delivery Orbit - Orbit altitude at deployment by Orbiter (km)
- Final Orbit - Satellite operational orbit altitude (km) and inclination (Degrees)
- Launch Site - Eastern test range (Cape Kennedy) or Western test range (Vandenberg AFB)
- Launch Data - Last three digits represent the year of launch, e.g. 087 1987
- Carrier - Upper stage used to boost payload to final orbit or to support payload in delivery orbit.
- Manif Number - NASA Flight Assignment Manifest flight number, June 1980
- File Number - Prefix letters are unique to each satellite and data source reference:

  - NASA = NASA STS Mission Model, Oct 1977
  - LEP = Low Energy Payload Model, Sept 1979
  - MDC = Mission Data Catalog, Oct 1979
  - STP = Space Technology Program (selected unclassified missions)
  - FAM = NASA Flight Assignment Manifest, June 1980
  - STM = NASA Space Systems Technology Model, May 1980
  - AVN = Aviation Week

    FROM MISSION DATA CATALOG

  - MML = MMS Mission List, June 1980
  - GSF = Goddard Space Flight Center reports, July 1980
  - 5 Yr = Five Year Plan (1981 - 1985)
  - A&A = Astronautics & Aeronautics.

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
IECM-IND ENV CONTAM	DI-2	JSC	A	338.00	1.30	.80	278	278	40.30	ETR	030081	1 PALLET	STS-1	FAM240	203FAM
PDRS TEST ART.		JSC	A		2.50	4.00	278	278	38.00	ETR	120081	UNIQ STR	STS-3	FAM240	227FAM
IECM-IND ENV CONTAM	DI-2	JSC	A	338.00	1.30	.80	278	278	38.00	ETR	120081	1 PALLET	STS-3	FAM240	225FAM
OSTA1-FEAT IDEN LAND	DI-1	OSTA	A	34.00	1.30	.90	278	278	40.30	ETR	080081	OFT PALL	STS-2	FAM240	223FAM
IECM-IND ENV CONTAM	DI-2	JSC	A	338.00	1.30	.80	276	278	40.30	ETR	080081	1 PALLET	STS-2	FAM240	208FAM
IECM.GAS TEST ARTICL			A							ETR	040082		STS-4	FAM240	228FAM
SPAS-01 STS PALLET		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	110482	SPEC STR	STS-6	MB8129	230MBB
TDRS-A	C-1	WU	A	1905	7.00	2.90	278	35786	.01	ETR	091582	IUS-2	STS-5	STM	250STM
INTELSAT 5A(F5)		COM	A	1940	6.00	2.60	296	35786	.01	ETR	110482	SSUS-A	STS-6	AVN	251AVN
TELESAT E		CAN	A	1000	2.00	2.10	296	35786	.01	ETR	110482	SSUS-D	STS-6	AVN	252AVN
SBS-C		SBSC	A	1000	2.00	3.60	296	35786	28.50	ETR	110482	SSUS-D	STS-6	AVN	264AVN
INSAT-1A		IND	A				278	35786	.01	ETR	100483	SSUS-D	STS-13	AVN	267AVN
TDRS-D			A	2270	7.00	2.90	278	35786		ETR	121683	IUS-2	STS-15	AVN	268AVN
SPACELAB-2(SOL/ASTRO	U-2	OSS	A	15800	18.00	4.60	374	374	50.00	ETR	110483	3 PALLET	STS-14	FAM240	269FAM
DOD 83-1		DOD	A							ETR	042383		STS-9	DOD400	270DOD
SBS-B		SBSC	A	1000	2.00	3.60	296	35786	.01	ETR	031583	SSUS-D	STS-8	AVN	253AVN
TDRS-B		WU	A	2270	7.00	2.90	278	35786	.01	ETR	011883	IUS-2	STS-7	AVN	254AVN
INTELSAT 5B(F-6)		COM	A	1940	6.00	2.60	296	35786	.01	ETR	031583	SSUS-A	STS-8	AVN	255AVN
TELESAT F		CAN	A	1000	2.00	2.10	296	35786	.01	ETR	031583	SSUS-D	STS-8	AVN	256AVN
P80-1 STP		DOD	A	4989	4.00	2.10		741	72	ETR	070783	UNIQ STA	STS-11	DOD400	006DOD
LANDSAT D	R-2	NOAA	A	1597	3.00	2.00	278	705	98	WTR	060083	MMS		STM180	061STM
SIRE-SPACE IR		DOD	A	2487	11.00	3.00	740	740	98	WTR	060083	1 PALLET		STP409	021STP
SPAS-01 STS SAT		MBB	A	1600	1.50	4.20	296	296	28.50	ETR	060083	SPEC STR		MB8129	240MBB
TETHERED SAT SYS	U-4	OSTS	P	1500							070083			STM180	249STM
SPACELAB-1 (VERIFCMU	U-2	OSS	A	15800	18.00	4.60	250	250	57	ETR	051083	1 PALLET	STS-10	AVN	258AVN
TDRS-C		WU	A	2270	7.00	2.90	278	35786	.01	ETR	100483	IUS-2	STS-13	AVN	259AVN

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
MPS(MEA-1)			A				296	296	28.50	ETR	031583	SPEC STR	STS-8	FAM240	260FAM
OSTA-2(SEPS)		OSTA	A				278	278	28.50	ETR	011883		STS-7	FAM240	263FAM
RCA-E		RCA	A	944	1.60	1.20	296	35786	.01	ETR	031583	SSUS-D	STS-8	AVN	274AVN
INSAT-1B		IND	A	944	3.00	2.50	278	35786	.01	ETR	121683	SSUS-D	STS-15	AVN	275AVN
DOD 83-2		DOD	A							ETR	070783		STS-11	DOD400	277DOD
CHEM REL MODULE	S-5		A	2700	2.00	3.00	278	1200	57	ETR	060083	UNIQ STA	STS	STM180	600STM
SPACELAB-6(SOLAR TER	U-2	OAST	A				389	389	57	ETR	122184	3 PALLET	STS-30	FAM240	278FAM
TELESAT-G		CAN	A				296	35786	.01	ETR	012784	SSUS-D	STS-17	AVN	279AVN
PALAPA B1		INDS	A	944	3.00	1.90	296	35786		ETR	012784	SSUS-D	STS-17	AVN	280AVN
SPACELAB 4 LIFE SCI.	L-1		A	14000			296	296	46.00	ETR	052984	SPEC STR	STS-22	FAM240	281FAM
MPS-2 MAT. PROCESSIN	U-1		A	4780	3.00	4.60	296	296	28.50	ETR	110184	OFT PALL	STS-28	FAM240	276FAM
SPACELAB-D1 (BMFT)	U-2	GER	A				296	296	28.50	ETR	080184	1 PALLET	STS-25	FAM240	261FAM
MPS-1 MAT. PROCESSIN	U-1		A				296	296	28.50	ETR	012784	OFT PALL	STS-17	FAM240	262FAM
SPAS-01 STS PALLET		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060084	SPEC STR		MBB129	231MBB
ERBS-EARTH RAD BUDGT	E-4	OSTA	A	1134	4.00	2.10	296	600	46.00	ETR	052984	MMS	STS-22	STM180	008STM
DOD 84-2		DOD	A								060084	STS TBD		DOD400	014LEP
SIRE-SPACE IR		DOD	A	2487	11.60	3.00	740	740	98	WTR	060084	1 PALLET		STP409	022STP
PEP-PWR EXT PKG	U-6		P	950			296	296	28.50	ETR	040084			GAC440	039STM
PEP-PWR EXT PKG	U-6		P	950			296	296	28.50	ETR	080084			GAC440	040STM
OSS-2 (SPACE SCI)		OSS	A				296	296	28.50	ETR	071784	OFT PALL	STS-24	FAM240	057FAM
TRANSIT		DOD	A	164.00	2.10	.46	278	1100	90	WTR	060084			DOD400	073LEP
SMM-SOLAR MAX RETURN	S-1		A	2315	4.00	2.30	575	575	28.50	ETR	060084	DELTA		STM180	119STM
REFLIGHT JPP											100284		STS-27	FAM240	197FAM
TETHERED SAT SYS	U-4	OSTS	P	1500							070084			STM180	201STM
PALAPA B2		INDS	A	944			296	296	28.50	ETR	050484	SSUS-D	STS-21	AVN	202AVN
OSTA-3 (SPACE&TERR)		OSTA	A				279	279	28.50	ETR	083184	SPEC STR	STS-26	FAM240	220FAM

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
SPACELAB-3	U-2		A	15800	28.00	4.60	370	370	57	ETR	041884	1 PALLET	STS-20	FAM240	272FAM
SYNCOM IV-1 LEASAT		HUGHES	A	1315	4.00	4.10	296	35786	.01	ETR	012784	UNIQ STA	STS-17	AVN	273AVN
RCA-F			A				296	35786	.01	ETR	071784	SSUS-D	STS-24	AVN	283AVN
ARABSAT-A			A				296	35786	.01	ETR	071784	SSUS-D	STS-24	AVN	284AVN
AT&T-1			A				296	35786	28.50	ETR	071784	SSUS-D	STS-24	AVN	286AVN
AMPTE-ACT MAG PART E	S-6		A	770	1.10	3.00	300	7RE	28.50	ETR	083184	SSUS-D	STS-26	STM180	287STM
SYNCOM IV-2 LEASAT		HUGHES	A	1315	4.00	4.10	296	35786	.01	ETR	050484	UNIQ STA	STS-21	AVN	288AVN
ST-SPACE TELESCOPE	A-3	OSS	A	11000	13.60	4.30	593	593	28.50	ETR	011184	SPEC STR	STS-16	STM180	289STM
LDEF	OI-10	OAST	A	4500	9.10	4.30	509	509	28.50	ETR	111584		STS-29	STM180	290STM
LANDSAT D' (5YR)		NOAA	P	1597	3.00	2.00	278	705	98	WTR	060084	MMS		5YR000	291LSP
AT&T-2			A				296	35786	.01	ETR	110184	SSUS-D	STS-28	AVN	292AVN
ARABSAT-B			A				296	35786	.01	ETR	083184	SSUS-D	STS-26	AVN	293AVN
SYNCOM IV-3 LEASAT		HUGHES	A	1315	6.00	4.20	296	296	28.50	ETR	083184	UNIQ STA	STS-26	AVN	294AVN
GALILEO ORBITER	P-1	JPL	A	1600	5.10	4.40	370	4RJ	28.50	ETR	022084	IUS-3	STS-18	STM180	295STM
GALILEO PROBE	P-1	JPL	A	260.00		1.30	370	4RJ	28.50	ETR	031584	IUS-3	STS-19	STM180	296STM
INTELSAT 5C			A	1940	6.00	2.60	296	35786	.01	ETR	110184	SSUS-A	STS-28	AVN	300AVN
TELESAT-I		CAN	A	1000	2.00	2.10	296	35786	.01	ETR	050484	SSUS-D	STS-21	AVN	301AVN
RCA-G			A				509	35786	.01	ETR	111584	SSUS-D	STS-29	AVN	302AVN
OSTA-2(MEA-MAUS)			A				296	296	28.50	ETR	050484	SPEC STR	STS-21	FAM240	372FAM
NOAA-G	E-5		A	4173			296	330	99	WTR	061384	UNIQ STA	IWA	FAM240	373FAM
DOD 85-I		DOD	A							WTR	101984		IW	DOD400	374FAM
GPS-GL PLS SAT		DOD	A	680	2.10	1.80		20190	63	ETR	060084	PAM		DOD400	476DOD
DOD 85-2		DOD	A							ETR	110284		STS-29	DOD400	613FAM
GPS-GL PLS SAT (4/YR		DOD	A	680	2.10	1.80		20190	63	ETR	060085	PAM		DOD400	477DOD
AT&T-3			A				296	35786	.01	ETR	020185	SSUS-D	STS-32	FAM240	375FAM
INTELSAT 5D			A	1921	6.00	2.50	296	35786	.01	ETR	120385	SSUS-A	STS-49	NDC	376NDC

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
ISPM-SOLAR POLAR ESA	S-3	ESA JPL	A	683	2.00	3.20	370	1.6AU	28.50	ETR	042585	IUS-3	STS-36	FAM240	271AVN
SPAS-01 STS SAT		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060085	SPEC STR		MBB129	241MBB
ISPM-SOLAR POLAR NAS	A-3		A	683	2.00	3.20	370	1.6AU	28.50	ETR	032685	IUS-3	STS-35	FAM240	198FAM
TRANSIT		DOD	A	164.00	2.10	.46	278	1100	90	WTR	060085			DOD400	074LEP
PEP-PWR EXT PKG	U-6		P	950			296	296	28.50	ETR	060085			GAC440	041STM
PEP-PWR EXT PKG	U-6		P	950			296	296	28.50	ETR	090085			GAC440	042STM
PEP-PWR EXT PKG	U-6		P	950			296	296	28.50	ETR	120085			GAC440	043STM
DOD 85-7		DOD	A							ETR	050185		STS-37	DOD400	001FAM
GRO-GAMMA RAY OBSEV.	A-7	OSS	A	11000	6.00	4.50	296	400	28.50	ETR	061985	MMS	STS-39	STM180	005STM
DOD 85-8		DOD	A							ETR	072685		STS-42	DOD400	002FAM
LANDSAT D***(5YR)		NOAA	P	1597	3.00	2.00	278	705	98	WTR	060085	MMS		SYR000	019LEP
TETHERED SAT SYS	U-4	OSTS	P	1500							070085			STM180	020STM
COBE COSMC BKGND EXP	A-4	OSS	A	1421	4.80	4.40	296	400	99	WTR	070085	UNIQ STA 4W		STM180	045STM
GRAVSAT A1	R-4	OSTA	P	4000	4.00	1.20	296	170	28.50	ETR	100985	SSUS-D	STS-46	FAM240	066FAM
TDRS			C	2267	7.00	2.90	296	35786	.01	ETR	060085	IUS-2		MDC409	118MDC
DOD 86-1		DOD	A							WTR	100085		STPT80	DOD400	155FAM
FOR.COMM/SBS			C	615	1.60	1.40	296	35786	.01	ETR	040085	SSUS-D		MDC409	181MDC
FOR.COMM/SBS			C	615	1.60	1.40	296	35786		ETR	080085	SSUS-D		MDC409	182MDC
OSTA-SORTIE			C								113185			GAC440	183STM
NASA FREE FLYER										WTR	120085		6W	FAM240	195FAM
REF_IGHT OPS											081385		STS-42	FAM240	196FAM
MAGSAT B	R-1	OSTA	P	272.00	.90	.90	296	550	99	WTR	060085	SSUS-A		SYR000	219NAS
SP-_AB-5 (SOL/ASTRO)	U-2		A				370	370	57	ETR	031285	4 PALLET	STS-34	FAM240	299AVN
MPS-3 MATL PROCESSIN	U-1		A				296	296	28.50	ETR	100985	OFT PALL	STS-46	FAM240	304AVN
SBS-D			A	1000	2.00	3.60	296	35786	.01	ETR	100985	SSUS-D	STS-46	AVN	305AVN
PRC-1 PEOP REP CHINA			A				296	35736	.01	ETR	120385	SSUS-D	STS-49	AVN	306AVN

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
SYNCOM IV-4 LEASAT			A	1315	4.00	4.10	296	35786	.01	ETR	020185	UNIQ STA	STS-32	AVN	307AVN
GSS-3 (SPACE SCI)		GSS	A				296	296	28.50	ETR	020185	OFT PALL	STS-32	FAM240	312AVN
RCA-H			A				296	35786	.01	ETR	020185	SSUS-D	STS-32	AVN	313AVN
SPACELAB-7 EAR OBSV	U-2	OAST	A				370	370	57	ETR	100185	4 PALLET	STS-45	FAM240	314AVN
SYNCOM IV-5 LEASAT			A	1315	4.00	4.10	296	35786	.01	ETR	061985	UNIQ STA	STS-39	AVN	318AVN
SPACELAB-8 MATL PROC	U-2		A				296	296	28.50	ETR	060585	1 PALLET	STS-38	FAM240	319AVN
GLOBAL DISASTER COMN			P	544	3.00	1.50	296	35786	.01	ETR	060085	SSUS-D		MDC409	320MDC
INMARSAT			A	943	1.00	1.20	296	35786	.01	ETR	060085	SSUS-D		MDC	348MDC
DOD 85-3		DOD	A							ETR	011085		STS-31	DOD400	387FAM
DOD 85-4		DOD	A							ETR	010085		STSTBD	DOD400	388FAM
HALLEY FLYBY	P-3	JPL	P	3800	70.00	6	278	1.5AU	28.50	ETR	070085	IUS/SEPS		STM180	390STM
PEP-PWR EXT PKG	U-6		P	950			296	296	28.50	ETR	080085			GAC440	391STM
DOD 85-6		DOD	A							ETR	040085		STSTBD	DOD400	414FAM
SPACELAB D4 (BMFT)	U-2		A				370	370	57	ETR	071685	4 PALLET	STS-40	FAM240	415FAM
TELESAT-H			A	998	2.00	2.10	296	35786	.01	ETR	100985	SSUS-D	STS-46	MDC409	416MDC
GSS-4(SPACE SCI)			A				296	296	99	WTR	070085	OFT PALL	4%	FAM240	419FAM
GSTA-4(SPACE&TERR)			A				TBD	TBD	28.50	ETR	103185	SPEC STR	STS-47	FAM240	420FAM
DOD 85-5		DOD	A							WTR	022185		STS-33	DOD400	421FAM
GRAVSAT A2	R-4		A	4000	4.00	1.20	296	170	28.50	ETR	120385	SSUS-D	STS-49	FAM240	431FAM
SPACELAB 10(LIFE SC)	L-1		A	14000			296	296	46.00	ETR	111285	1 PALLET	STS-48	FAM240	432FAM
DEF SAT COMM SYS(DSC		DOD	A	1050	1.80	3.00		35786	.01	ETR	040085			DOD400	456DOD
DEF SAT COMM SYS(DSC		DOD	A	1050	1.80	3.00		35786		ETR	080085			DOD400	457DOD
SIRE-SPACE IR		DOD	A	2437	11.60	3.00	740	740	98	WTR	060085	1 PALLET		STP409	553STP
CHEM REL MODULE	S-5		C	2700	2.00	3.00	278	1200	57	ETR	060085	UNIQ STA		GAC440	604STM
LG DEPLOY ANTENNA			P	4700			744	744	28.50	ETR	060085			GAC440	605STM
SIRTF-IR TELE FAC	A-6		P	2950	3.70	3.10	400	400	45.00	ETR	060096	2 PALLET		STM180	606STM

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
OPEN-ORIG PLASMA ETH	S-7		P	1000	3.50	3.00	296	240ER	28.50	ETR	060086	SSUS-A		STM180	607STM
SUBSAT FAC-FREE FLYE	S-9	OST	P	500.00	1.50	1.00	296	296	28.50		060086	UNIQ STA		STM180	608STM
GPS-GL POS SAT (6/YR		DOD	A	680	2.10	1.80		20190	63	ETR	060086	PAM		DCD400	478DCD
X-RAY TIMING EXPL	A-10	OSS	P	1000	4.00	2.00	300	400	28.50	ETR	060086	UNIQ STA		GSF260	392STM
VENUS ORBIT IMG RAD	P-2		P	1000	12.00	2.00	296	.72AU	28.50	ETR	060086	IUS-2		STM180	393STM
30/20 GHZ ANT TRUNK	C-4		P	1000			296	35786	.01	ETR	060086	SSUS		STM180	394STM
SEPS-SOL ELECT PROP	T-9		P	3400			296	35786	.01	ETR		IUS		STM	395STM
LG STRUCT CONSTR	U-5		P				296	296	28.50	ETR	060086			STM180	396STM
INMARSAT			A	943	1.00	1.20	296	35786	.01	ETR	040086	SSUS-D		MDC409	349MDC
SPAS-01 STS PALLET		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060086	SPEC STR		MBB129	232MBB
25 KW PW MOD		OAST	P	14000			435	435	28.50	ETR	060086			STM180	222NAS
OSS-5 (SPACE SCI)			A				296	296	28.50	ETR	011786	OFT PALL	STS-52	FAM240	209FAM
SPACELAB-13 MATL SCI	U-2		A				296	296	28.50	ETR	020086	1 PALLET	STS-54	FAM240	210FAM
DOD 86-2		DOD	A							ETR	011086		STS-51	DOD400	204FAM
SPA-LAB-16 (SOL/ASTR	U-2		A				370	370	57	ETR	010386	4 PALLET	STS-51	FAM240	205FAM
HI ENERGY EX		OSS		2268	4.00	4.60	463	463	28.50	ETR	060086			NAS407	206NAS
LDEF	OI-10	OAST	P	4500	9.10	4.30	509	509	28.50	ETR	060086			STM180	184STM
NOAA H		OSTA	P	4173	8.00	3.70	278	900	99	WTR	060086	MMS		GAC400	156FAM
SPACELAB (SOL/TERR)											060086				157STM
TRANSIT		DOD	A	164.00	2.10	.46	278	1100	90	WTR	060086			DOD400	075LEP
ORBITER CAM FREE FLY		OSS	C	1400			300	300	95	WTR	060086			MNL200	060MNL
ICEX-ICEBERG		OSTA	P	5000	18.00	4.60	700	700	87	WTR	060086			SYR000	044LEP
REGION H2O QUAL. MON		OSTA	P	1000	3.50	2.50	278	700	58	ETR	060086			LEP379	023LEP
TETHERED SAT SYS	U-4	OSTS	P	1500							070086			STM180	011STM
DOD 86-5										ETR			STS-55	FAM	018FAM
MATERIAL EXP CARRIER	U-9	OSTS	P	5000	6.00	4.60			28.00	ETR	080086			STM180	029STM

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
UARS-UPPER ATMOS RES	E-7	OSTA	P	3700	4.00	2.00	278	500	56	ETR	060086	MMS		LEP379	030LEP
COMET RENDEZ	P-3	JPL	A	3600	70.00	6	278	1.5AU	28.50	ETR	060086	IUS/SEPS		STM180	033STM
PEP (6 FLTS)	U-6		P	950			296	296	28.50	ETR	060086			GAC440	037STM
ASTROPHYSICS EXPL		OSS	C					525	56	ETR	060086			MML200	064LEP
NOSS-NAT. OCEAN SAT	E-6	OSTA	P	3816	10.70	4.50	278	700	87	WTR	060086	UNIQ STA		STM180	081LEP
OP _AND OBSER SYS A		OSTA	P	1700	4.30	2.20	700	700	98	WTR	060086	MMS		LEP379	085LEP
SPACE TEST PGM		DOD	P	1000	1.00	4.00	TBD	TBD		TBD	060086			DOD400	086LEP
SASP-SC & APP SP PLA	L1/U7	OSTA	P	40000			296	296	28.50	ETR	060086			STM180	093STM
OSTA-SORTIE(2 FLTS)											060086				115STM
SPACELAB(BNFT)											060086				134STM
DOD 86-6		DOD	A							ETR	040086		STSTBD	DOD400	147FAM
DOD 86-8		DOD	A							ETR	040086		STSTBD	DOD400	149FAM
DOD 86-10		DOD	A							ETR	072486		STS-64	DOD400	151FAM
DOD 86-11		DOD	A							ETR	092386		STS-68	DOD400	152FAM
INMARSAT			A	943	1.00	1.20	296	35786	.01	ETR	080086	SSUS-D		GAC	165MDC
EARTH OBS/COMMUN			C	1413	4.00	3.10	296	35786	.01	ETR	060086	IUS-2		MDC409	166MDC
FOREIGN COMM.			C	636	3.47	1.80	296	35786	.01	ETR	060086	SSUS-D		MDC409	167MDC
FOR.COMM./SBS			C	615	1.60	1.40	296	35786	.01	ETR	020086	SSUS-D		MDC409	168MDC
FOR.COMM./SBS			C	615	1.60	1.40	296	35786	.01	ETR	040086	SSUS-D		MDC409	169MDC
FOR.COMM./SBS			C	615	1.60	1.40	296	35786	.01	ETR	060086	SSUS-D		MDC409	170MDC
FOR.COMM./SBS			C	615	1.60	1.40	296	35786	.01	ETR	080086	SSUS-D		MDC409	171MDC
FOR.COMM./SBS			C	615	1.60	1.40	296	35786	.01	ETR	100086	SSUS-D		MDC409	172MDC
REF_IGHT OPP.										ETR	090086		STS-67	FAM240	191FAM
REFLIGHT OPP										ETR	060086		STS-63	FAM240	192FAM
NASA FREE FLYER										WTR	040086		BW	FAM240	193FAM
EUVE-EXT ULTRAVIOLET	A-5		A	400.00	4.50	2.00	296	550	28.50	ETR	011786	UNIQ STA	STS-52	GSF260	194FAM

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
OSS-6 (SPACE SCI)			A				296	296	28.50	ETR	040086	OFT PALL	STS-58	FAM240	212FAM
SPACELAB-9 ASTRPHYS	U-2		A				370	370	57	ETR	050086	2 PALLET	STS-60	FAM240	213FAM
MPS-4			A				296	296	28.50	ETR	070086	OFT PALL	STS-65	FAM240	214FAM
SPACELAB-11 PLASMA	U-2		A							WTR	080086	3 PALLET	10W	FAM240	216FAM
SPACELAB-15 LIFE SCI	L-1		A	14000			296	296	46.00	ETR	080086	1 PALLET	STS-66	FAM240	217FAM
DOD 86-3		DOD	A							ETR	021186		STS-53	DOD400	218FAM
PRC-2 PEOP REP CHINA			A				296	35786	.01	ETR	030086	SSUS-D	STS-55	AVN	316AVN
RESOURCES/POLLUTION			C	615	1.58	1.22	296	35786	.01	ETR	060085	SSUS-D		MDC409	328MDC
GOES-GEOS OP ENV SAT	E-2		P	720			278	35786	.01	ETR	060086	SSUS		STM180	343STM
INTELSAT 5 E			A	1921	6.00	2.50	296	35786	.01	ETR	030086	SSUS-A	STS-56	MDC409	378MDC
INTELSAT 5 F			A	1921	6.00	2.50	296	35786	.01	ETR	060085	SSUS-A	STS-62	MDC409	379MDC
DEF SAT COMM SYS(DSC		DOD	A	1050	1.80	3.00		35786	.01	ETR	040085			DOD400	458DOD
DEF SAT COMM SYS(DSC		DOD	A	1050	1.80	3.00		35786	.01	ETR	080086			DOD400	459DOD
ROMS-P				4082	9.00	3.10	741	741	98	WTR				STP	555STP
TALON GOLD LASER		DOD	A	6800	9.00	4.60	296	296	28.50	ETR	060085			STP409	558STP
STARLAB TELESCOPE	A-11		P	2000	5.00	1.50	300	300	29.00	ETR	060087	2 PALLET		STM180	609STM
SOLAR SOFT X-RAY	S-8		P	1300	6.00	1.20	430	430	57	ETR	060097	1 PALLET		STM180	610STM
SOC-SP OPS-CTR	U-14		P								080087			SYR000	601STM
SOC-SP SP-CTR	U-14		P								040087			SYR000	556STM
FOR COMM/SBS(8/87)			P	615	1.60	1.40	296	35786	.01	ETR	080087	SSUS-D		MDC409	554MDC
GPS-GL POS SAT (8/YR		DOD	A	680	2.10	1.80		20190	63	ETR	060087	PAM		DOD400	479DOD
DEF SAT COMM SYS(DSC		DOD	A	1050	1.80	3.00		35786	.01	ETR	040087			DOD400	460DOD
DEF SAT COMM SYS(DSC		DOD	A	1050	1.80	3.00		35786	.01	ETR	030087			DOD400	461DOD
FOR COMM/SBS(4/87)			C	615	1.60	1.40	296	35786	.01	ETR	040087	SSUS-D		MDC409	397MDC
INTELSAT 6			P	1921	6.00	2.50	296	35786	.01	ETR	060087	SSUS-A		AVN360	360MDC
SP-LAB (SOL/ASTRO)	U-2		C								060087			GAC440	282STM

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE FILE NUMBER
PEP (7 FLTS)	U-6		P	950			296	296	28.50	ETR	060087			GAC440 257STM
SPAS-01 STS SAT		NBB	A	1800	1.50	4.20	296	296	28.50	ETR	060087	SPEC STR		MB3129 242MBB
COASTAL SAT.		OSTA	P	4173	8.00	3.70	296	296	100	WTR	060087	MMS		NAS407 226NAS
PLASMA TURB EXPLOR	S-10		P							ETR	060087	SSUS		STM180 211STM
GOES-GEO ORB ENV SAT	E-2		P	720			278	35786	.01	ETR	060087	SSUS		STM180 153STM
NOAA I		OSTA	P	4173	8.00	3.70	278	900	99	WTR	060087	MMS		GAC400 154FAM
SPACELAB(BMFT)											060037			135STM
OSTA-SORTIE(2 FLTS)											060087			116STM
SPACE TEST PGM		DOD	P	1000	1.00	4.00	TBD	TBD		TBD	060037			DOD400 087LEP
TRANSIT		DOD	A	164.00	2.10	.46	278	1100	90	WTR	060087			DOD400 076LEP
GRAVITY PROBE B	A-8	OSS	P	1270	4.20	4.20	296	520	90	WTR	060087	MMS		MML200 046LEP
AXAF-ADV X-RAY ASTRO	A-9	OSS	P	10000	11.50	3.10	450	450	28.50	ETR	060087	MMS		STM180 010STM
CRO-COSMIC RAY OBSER	A-13	OSS	C	18000	15.00	4.50	400	400	56	ETR	060087	MMS		STM180 013STM
UARS-UPPER ATMOS RES	E-7	OSTA	P	3700	4.00	2.00	278	500	56	ETR	060087	MMS		LEP379 017LEP
TOPEX-TOPOG EXP	E-9	OSTA	P	1000	4.00	3.00	278	700	87	WTR	060087	UNIOSTA		LEP379 051LEP
EARTH SURVEY		OSTA	P	772	3.00	1.50	278	910	99	WTR	060087			LEP379 054LEP
SOIL MOISTURE	R-8	OSTA	O	408.00	3.50	4.60	278	465	56	ETR	060087	MMS		LEP379 070LEP
TETHERED SAT SYS	U-4	OSTS	P	1500							070037			STM180 072STM
POLAIRE		CANADA	P	440.00		.80	300	300	90	WTR	060087			LEP379 102LEP
ALL WEATHER MICRO		CANADA	P	2000	1.50	4.30	278	790	83	WTR	060087			LEP379 104LEP
DEF MET SAT PGM		DOD	P	2500	6.00	2.00		835	99	WTR	060087			DOD400 122LEP
SUBSAT FAC-FREE FLYE	S-9	OST	P	500.00	1.50	1.00	296	296	28.50		060087	UNIQ STA		STM180 176STM
ERBS-EARTH RAD BUDGE	E-4	OSTA	C	1134	4.00	2.10	296	600	46.00	ETR	060087	MMS		GAC440 188STM
OP LAND OBSER SYS OB		OSTA	P	1700	4.30	2.20	700	700	98	WTR	060087	MMS		LEP379 189LEP
MATERIAL EXP CARRIER	U-9	OSTS	P	5000	6.00	4.60			28.00	ETR	080087			STM180 190STM
STORMSAT			C	1600	6.00	3.70	296	35786	.01	ETR	060037	MMS/ILS		MDC409 321MDC

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
EARTH OBS/COMMUN			C	1921	6.00	2.50	296	35786	.01	ETR	060087	SSUS-A		MDC409	322MDC
MAP GRAVITY FIELD/CO			C	615	1.00	1.40	296	35786	.01	ETR	060087	SSUS-D		MDC409	331MDC
RESOURCES/POLLUTION			C	667	3.41	1.90	296	35786	.01	ETR	060087	SSUS-D		MDC409	333MDC
FOR.COMMUN/EARTH OBS			C	943	4.00	2.50	296	35786	.01	ETR	060087	SSUS-D		MDC409	353MDC
INMETSAT(6/87)			C	943	3.00	2.50	296	35786	.01	ETR	060087	SSUS-D		MDC409	356MDC
US & FOR COMM (4/87)			C	943	1.60	1.20	296	35786	.01	ETR	040087	SSUS-D		MDC409	425MDC
US & FOR COMM (8/87)			C	943	1.60	1.20	296	35786	.01	ETR	080087	SSUS-D		MDC409	426MDC
MPS-MATL PROCESS			C								060087			GAC440	486STM
SPACELAB (MATL PROC)	U-12		O								060087			GAC440	500STM
SPACELAB (EARTH ORB)	U-2		C								060087			GAC440	519STM
FOREIGN COMM(3/87)			C	943	3.70	2.50	296	35786	.01	ETR	030087	SSUS-D		MDC409	525MDC
FOREIGN COMM(6/87)			C	943	3.70	2.50	296	35786	.01	ETR	060037	SSUS-D		MDC409	526MDC
FOREIGN COMM(9/87)			C	943	3.70	2.50	296	35786	.01	ETR	090087	SSUS-D		MDC409	527MDC
NATO IV (FOR/DOD)			P	1057			296	35786	.01	ETR	060087	T3D		DOD400	526LEP
EARTH OBS/COMM			C	943			296	35786	.01	ETR	060087	SSUS-D		MDC409	529MDC
RESOURCES/POLLUTION			C	615	1.58	1.22	296	35786		ETR	060087	SSUS-D		MDC409	530MDC
OSS(SP SCI.2 FLTS)			C								060087			GAC440	531STM
NOSS-NAT OCEAN SAT	E-6	OSTA	P	3816	10.70	4.50	278	700	87	WTR	040087	UNIQ STA		STM180	550STM
SOC-SP OPS-CTR	U-14		P								080088			SYR000	614STM
LAMAR-LG AREA MOD AR	A-14		C	5200	6.00	4.00	278	400	28.50	ETR	060088	MMS		GSF260	611STM
SOC-SP OPS-CTR	U-14		P								040088			SYR000	603STM
MINI-HALO STP		DOD	C	2268			296	35786	.01	ETR	060088	IUS		DOD400	557STP
EUVE-EXT UV EXPLOR	A-5	OSS	P	400.00	4.50	2.00	296	550	28.50	ETR	060088	MMS		GSF260	551STM
OSS(SP SCI.2 FLTS)			C								060088			GAC440	532STM
SPACELAB (MATL PROC)	U-12		O								060088			GAC440	501STM
MPS-MATL PROCESS			C								060088			GAC440	487STM

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
GPS-GL POS SAT (7/YR		DOD	A	680	2.10	1.80		20190	63	ETR	060088	PAM		DOD400	480DOD
US COMM. (2/88)			C	1575	6.10	2.50	296	35786	.01	ETR	020088	SSUS-A		MDC409	433MDC
US COMM. (4/88)			C	1575	6.10	2.50	296	35786	.01	ETR	040088	SSUS-A		MDC409	434MDC
US COMM. (6/88)			C	1575	6.10	2.50	296	35786	.01	ETR	060088	SSUS-A		MDC409	435MDC
US COMM. (8/88)			C	1575	6.10	2.50	296	35786	.01	ETR	080088	SSUS-A		MDC409	436MDC
US COMM. (10/88)			C	1575	6.10	2.50	296	35786	.01	ETR	100088	SSUS-A		MDC409	437MDC
FOR. COMM/SBS (3/88)			C	615	1.60	1.40	296	35786	.01	ETR	030088	SSUS-D		MDC409	398MDC
FOR. COMM/SBS (6/88)			C	615	1.60	1.40	296	35786	.01	ETR	060088	SSUS-D		MDC409	399MDC
FOR. COMM/SBS (9/88)			C	615	1.60	1.40	296	35786	.01	ETR	090088	SSUS-D		MDC409	400MDC
INTELSAT 6			C	1921	6.00	2.50	296	35786	.01	ETR	040088	SSUS-A		GAC440	381MDC
INTELSAT 6			C	1921	6.00	2.50	296	35786	.01	ETR	080088	SSUS-A		GAC440	382MDC
INMETSAT (4/88)			C	943	3.00	2.50	296	35786	.01	ETR	040088	SSUS-D		MDC409	357MDC
INMETSAT (8/88)			C	943	3.00	2.50	296	35786	.01	ETR	080088	SSUS-D		MDC409	358MDC
MAG FIELD SURVEY B	R-7		P	800			300	300	97	WTR	060088	SSUS-A		STM180	344STM
RESOURCES/POLLUTION			C	667	3.41	1.90	296	35786	.01	ETR	060088	SSUS-D		MDC409	334MDC
SP-LAB (SOL/ASTRO)	U-2		C								060088			GAC440	295STM
SPAS-01 STS PALLET		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060088	SPEC STR		MBB129	233MBB
SUBSAT FAC-FREE FLYE	S-9	OST	P	500.00	1.50	1.00	296	296	28.50		060088	UNIQ STA		STM180	177STM
SPACELAB (SOL/TERR)											060088				158STM
SPACELAB(BMFT)											060088				136STM
OSTA-SORTIE(2 FLTS)											060088				117STM
SPACE TEST PGM		DOD	P	1000	1.00	4.00	TBD	TBD		TBD	060088			DOD400	088LEP
NOSS-NAT. OCEAN SAT	E-6	OSTA	P	3816	10.70	4.50	278	700	87	WTR	060088	UNIQ STA		STM180	082STM
TRANSIT		DOD	A	164.00	2.10	.46	278	1100	90	WTR	060088			DOD400	077LEP
OP LAND OBSER SYS C	R-5	OSTA	P	1700	4.30	2.20	700	700	98	WTR	060088	XMS		LEP379	071LEP
GLOB REG ATMOS MON		OSTA	O				700	700	98	WTR	060088			LEP379	052LEP

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
SPACELAB-2 IN HOLE	S-14	OSTA	O	10000	37.00	24	370	370	97	WTR	060088	1 PALLET		STM180	031STM
GRO-GAMMA RAY OBSERV	A-7	OSS	P	11000	1.00	4.50	296	400	28.50	ETR	060088	MMS		STM180	097STM
VLBI-VERY LG BASE IN	A-15	OSS	P			4.50	296	1000	45.00	ETR	060088			LEP379	028LEP
SCADM-SOL CYCDYN	S-13	OSS	C	2600	4.60	2.40	296	575	28.50	ETR	060088	MMS		LEP379	028LEP
ATMAS-ADV THERMAL MA	R-6	OSTA	P	1450	2.50	2.00	700	700	98	WTR	060088	MMS		STM180	049STM
ADV GEOL SAT		OSTA	C	2000			296	700	98	WTR	060088	TBD		LEP379	068LEP
SOLAR PROBE	S-11	OSTA	P	1500	4.40	3.80	296	4RS	28.50	ETR	060088	IUS		STM180	095STM
THIN ROOT SYS COMM	C-6	OSTA	O	2300	50.00	14	296	35786	.01	ETR	080088	IUS		STM180	099STM
PRIV EARTH RES		US INDUS	P	1700	4.30	2.20	700	700	98	WTR	060088			LEP379	106LEP
EARTH OBS/COMMUN.			C	1310	4.00	2.00	296	35786	.01	ETR	060088	SSUS-A		MDC409	339MDC
RESOURCES/POLLUTION			C	943	3.41	2.50	296	35786	.01	ETR	060088	SSUS-D		MDC409	340MDC
30/20 GHZ ANT CUST	C-4		P	1250			296	35786	.01	ETR	060088	SSUS		STM180	346STM
SASP-SC & APP SP PLA	L1/U7	OSTA	P	40000			296	296	28.50	ETR	060088			STM180	452STM
DEF MET SAT PGM		DOD	P	2500	6.00	2.00		835	99	WTR	060088			DOD400	514LEP
SPACELAB(LIFE SCI)	L-1		C	14000							060088			FAM240	567FAM
ORBITER CAM FREE FLY		OSS	C	1400			300	300	95	WTR	060088			MMS200	576MMS
MATERIAL EXP CARRIER	U-9	OSTS	P	5000	6.00	4.60			28.00	ETR	080088			STM180	577STM
LIDAR-LT INTS DET RG	EI-47	OSTA	P								060088	1 PALLET		STM180	578STM
FOREIGN COMM(3/88)			C	943	3.70	2.50	296	35786	.01	ETR	030088	SSUS-D		MDC409	579MDC
FOREIGN COMM (6/88)			C	943	3.70	2.50	296	35786	.01	ETR	060088	SSUS-D		MDC409	580MDC
FOREIGN COMM (9/88)			C	943	3.70	2.50	296	35786	.01	ETR	090088	SSUS-D		MDC409	581MDC
FOREIGN COMM (12/88)			C	943	3.70	2.50	296	35786	.01	ETR	120088	SSUS-D		MDC409	582MDC
NATO IV (FOR/DOD)			P	1057			296	35786	.01	ETR	060088	TBD		DOD400	583DOD
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060088			GAC440	584STM
25 KW PW MOD		OAST	P	14000			435	435	28.50	ETR	060088			STM180	597STM
TETHERED SAT SYS	U-4	OSTS	P	1500							070088			STM180	637STM

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060089			GAC440	585STM
SPACELAB(LIFE SCI)	L-1		C	14000							060089			FAM240	568FAM
USS(SP SCI,2 FLTS)			C								060089			GAC440	533STM
SPACELAB (EARTH ORB)	U-2		C								060089			GAC440	520STM
DEF MET SAT PGM		DOD	P	2500	6.00	2.00		835	99	WTR	060089			DOD400	515LEP
SPACELAB (MATL PROC)	U-12		D								060089			GAC440	502STM
MPS-MATL PROCESS			C								060089			GAC440	486STM
GPS-GL POS SAT (2/YR		DOD	A	680	2.10	1.80		20190	63	ETR	060089	PAM		DOD400	481DOD
DEF SAT COMM SYS(DSC		DOD	A	1050	1.80	3.00		35786	.01	ETR	040089			DOD400	462DOD
DEF SAT COMM SYS(DSC		DOD	A	1050	1.80	3.00		35786	.01	ETR	080089			DOD400	463DOD
US&FOR COMM (4/89)			C	943	1.60	1.20	296	35786	.01	ETR	040089	SSUS-D		MDC409	427MDC
US & FOR COMM (8/89)			C	943	1.60	1.20	296	35786	.01	ETR	080089	SSUS-D		MDC409	428MDC
INTELSAT 6			C	1921	6.00	2.50	296	35786	.01	ETR	040089	SSUS-A		GAC440	383MDC
INTELSAT 6			C	1921	6.00	2.50	296	35786	.01	ETR	080089	SSUS-A		GAC440	384MDC
INMETSAT (3/89)			C	943	3.00	2.50	296	35786	.01	ETR	030089	SSUS-D		MDC409	359MDC
INMETSAT (6/89)			C	943	3.00	2.50	296	35786	.01	ETR	060089	SSUS-D		MDC409	360MDC
INMETSAT (9/89)			C	943	3.00	2.50	296	35786	.01	ETR	090089	SSUS-D		MDC409	361MDC
INMETSAT (12/89)			C	943	3.00	2.50	296	35786	.01	ETR	120089	SSUS-D		MDC409	362MDC
FOR.COMMUN/EARTH OBS			C	943	4.00	2.50	296	35786	.01	ETR	060089	SSUS-D		MDC409	354MDC
MAG FLD SURV B-MAINT	R-7		P	600	1.00	1.20	300	300	97	WTR	060089	SSUS-D		STM	350STM
OCEAN RES SAR	E-11		C					300	28.50	ETR	060089			GSF260	347STM
SOIL MOIST ASSMT	R-8		C				296	465			060089	UNIQ STA		STM	345STM
RESOURCES/POLLUTION			C	667	3.41	1.90	296	35786	.01	ETR	040089	SSUS-D		MDC409	335MDC
RESOURCE/POLLUTION			C	667	3.41	1.90	296	35786	.01	ETR	080089	SSUS-D		MDC409	336MDC
SP-LAB (SOL/ASTRO)	U-2		C								060089			GAC440	297STM
SPAS-01 STS SAT		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060089	SPEC STR		MBB129	243MBB

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
LDEF	OI-10	OAST	P	4500	9.10	4.30	509	509	28.50	ETR	080089			STM180	185STM
SUBSAT FAC-FREE FLYE	S-9	OST	P	500.00	1.50	1.00	296	296	28.50		060089	UNIQ STA		STM180	178STM
SPACELAB(BMFT)											060089				137STM
OSTA-SORTIE(2 FLTS)											060089				120STM
SPACE TEST PGM		DOD	P	1000	1.00	4.00	TBD	TBD		TBD	060089			DOD400	089LEP
OP METEOROLOGY	E-10	OSTA	P	4500	10.00	4.50	296	800	87	WTR	060089	UNIQ STA		STM180	090STM
SATURN ORBIT(DUAL)	P-4	OSTA	P	3000	70.00	5.00	278	9.5AU	28.50	WTR	060089	IUS/SEPS		STM180	091STM
NOSS-NAT. OCEAN SAT		OSTA	P	3816	10.70	4.50	278	700	87	WTR	060089	UNIQ STA		STM180	083STM
TRANSIT		DOD	A	164.00	2.10	.46	278	1100	90	WTR	060089			DOD400	078LEP
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	060089			STM180	062STM
EARTH SURVEY		OSTA	P	772	3.00	1.50	910	910	99	WTR	060089	UNIQ STA		LEP379	055LEP
ICEX-ICE & CLIM EXP		OSTA	P	5000	18.00	4.60	700	700	87	WTR	060089			SYR000	050LEP
ENVIRON MONITOR		OSTA	C	1000	3.50	2.50	700	700	57	ETR	060089			LEP379	024LEP
V-BI-VERY LG BASE IN	A-15	OSS	P			4.50	296	1000	45.00	ETR	060089			LEP379	027LEP
EARTH OBS/COMMUN.			C	1413	4.00	3.10	296	35786	.01	ETR	060089	IUS-2		MDC409	325MDC
EARTH OBS/COMMUN.			C	943	4.00	2.50	296	35786	.01	ETR	060089	SSUS-D		MDC409	327MDC
ASTRONOMY AF(1)		OSS	C	950	1.00	2.40	296	5000		ETR	060089	IUS-2		MDC409	342MDC
FOR. COMM/SBS (4/89)			C	615	1.60	1.40	296	35786	.01	ETR	040089	SSUS-D		MDC409	402MDC
FOR. COMM/SBS (8/89)			C	615	1.60	1.40	295	35786	.01	ETR	080089	SSUS-D		MDC409	403MDC
US COMMUN.			C	943	4.30	2.50	296	35786	.01	ETR	060089	SSUS-D		MDC409	441MDC
US COMMUN.			C	1450	8.00	2.50	296	35786	.01	ETR	060089	SSUS-A		MDC409	444MDC
SOC-SP OPS-CTR	U-14		P								040089			SYR000	618STM
SOC-SP OPS-CTR	U-14		P								080089			SYR000	622STM
MATERIAL EXP CARRIER	U-10	OSTS	P	10000	12.00	4.60			28.00	ETR	080089			STM180	642STM
GAMMA-RAY TRANS EXP		OSS	C	3000			300	450	26.50	ETR	060089	XMS		GSF250	643STM
UV-PHOTO/POLAR EXPL		OSS	C	545			300	400	28.50	ETR	060089			GSF260	644STM

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
X-RAY OBSERVATORY A		OSS	C	3550				400	28.50	ETR	060089			GSF260	645STM
FOREIGN COMM			C	943	3.70	2.50	296	35786	.01	ETR	060089	SSUS-D		MDC409	646MDC
SIMULT ASTRON MISSIO			C	2875			296	35786	.01	ETR	060089	IUS		GSF260	647STM
INTNL UV EXPLOR F/O			C	500.00			296	35786	.01	ETR	060089	SSUS-D		GSF260	648STM
X-UV SPECTROSCOPY			C	1000			296	35786	.01	ETR	060089	SSUS-A		GSF260	649STM
NATO IV(FOR/DOD)			P	1057			296	35786	.01	ETR	060089	T3D		DOD400	650DOD
ADV INTPLAN EXPLOR			C	1200				LI			060089			GSF260	651STM
HEAVY NUCLEI EXPLOR		OSS	C	4000				400	56	ETR	060089			GSF260	652STM
X-RAY TIMING EXPL	A-10	OSS	C	1000	4.50	2.00	300	400	28.50	ETR	060089	UNIQ STA		GSF260	700STM
GRAVSAT B2	R-4	OSTA	A	4000	4.00	3.00	300	300	90	WTR	080090			MDC409	701LEP
MATERIAL EXP CARRIER	U-10	OSTS	P	10000	12.00	4.60			28.50	ETR	080090			STM180	653STM
OP LAND OBSER SYS A	R-5	OSTA	P	1700	4.30	2.20	700	700	98	WTR	060090	MMS		LEP379	654LEP
SOFT X-RAY SURVEY		OSS	C	1600			300	400	28.50	ETR	060090			GSF260	655STM
MOLECUL LINE SURVEY		OSS	C	1000			300	600	28.50	ETR	060090	UNIQ STA		GSF260	656STM
X-RAY SPECTROSCOPY		OSS	C	1500			300	400	28.50	ETR	060090	MMS		GSF260	657STM
EARTH OBS/COMMUN			C	1921	6.00	2.50	296	35786	.01	ETR	060090	SSUS-A		MDC180	658MDC
FOREIGN COMM (4/90)			C	943	3.70	2.50	296	35786	.01	ETR	040090	SSUS-D		MDC180	659MDC
FOREIGN COMM (8/90)			C	943	3.70	2.50	296	35786	.01	ETR	080090	SSUS-D		MDC180	660MDC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	040090			GAC440	661GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	080090			GAC440	662GAC
GRAVITY PROBE B	A-8	OSS	P	1270	4.20	4.20	296	520	90	WTR	060090	MMS		STM180	663STM
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060090			GAC440	580STM
EUVE-EXT UV EXPLOR	A-5	OSS	P	400.00	4.50	2.00	296	550	28.50	ETR	060090	MMS		GSF260	552STM
OSS(SP SCI.2 FLTS)			C								060090			GAC440	534STM
DEF MET SAT PGM		DOD	P	2500	6.00	2.00		835	99	WTR	060090			DOD400	526LEP
SPACELAB (MATL PROC)	U-12		O								060090			GAC440	553STM

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATEGORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
MPS-MATL PROCESS			C								060090			GAC440	489STM
GPS-GL POS SAT (4/YR		DOD	A	680	2.10	1.80		20190	63	ETR	060090	PAM		DOD400	462DOD
FOREIGN COMMUN			C	428.00	2.44	1.20	296	35786	.01	ETR	060090	SSUS-D		MDC409	445MDC
US COMMUN (8/90)			C	943	4.30	2.50	296	35786	.01	ETR	080090	SSUS-D		MDC409	442MDC
US COMMUN (4/90)			C	943	4.30	2.50	296	35786	.01	ETR	040090	SSUS-D		MDC409	443MDC
US COMMUN (3/90)			C	1575	6.10	2.50	296	35786	.01	ETR	030090	SSUS-A		MDC409	436MDC
US COMMUN (6/90)			C	1575	6.10	2.50	296	35786	.01	ETR	060090	SSUS-A		MDC409	439MDC
US COMMUN (9/90)			C	1575	6.10	2.50	296	35786	.01	ETR	090090	SSUS-A		MDC409	440MDC
US & FOR COMM			C	943	1.60	1.20	296	35786	.01	ETR	060090	SSUS-D		MDC409	429MDC
FOREIGN COMM/SBS (2/			C	615	1.60	1.40	296	35786	.01	ETR	020090	SSUS-D		MDC409	404MDC
FOREIGN COMM/SBS (4/			C	615	1.60	1.40	296	35786	.01	ETR	040090	SSUS-D		MDC409	405MDC
FOREIGN COMM/SBS (6/			C	615	1.60	1.40	296	35786	.01	ETR	060090	SSUS-D		MDC409	406MDC
FOREIGN COMM/SBS (8/			C	615	1.60	1.40	296	35786	.01	ETR	080090	SSUS-D		MDC409	407MDC
FOREIGN COMM/SBS (10			C	615	1.60	1.40	296	35786	.01	ETR	100090	SSUS-D		MDC409	408MDC
INTELSAT 6			C	1921	6.00	2.50	296	35786	.01	ETR	040090	SSUS-A		GAC440	385MDC
INTELSAT 6			C	1921	6.00	2.50	296	35786	.01	ETR	080090	SSUS-A		GAC440	386MDC
INMETSAT (4/90)			C	943	3.00	2.50	296	35786	.01	ETR	040090	SSUS-D		MDC409	363MDC
INMETSAT (8/90)			C	943	3.00	2.50	296	35786	.01	ETR	080090	SSUS-D		MDC409	364MDC
INMETSAT (12/90)			C	943	3.00	2.50	296	35786	.01	ETR	120090	SSUS-D		MDC409	365MDC
INMARSAT			C	943	1.00	1.20	296	35786	.01	ETR	040090	SSUS-D		MDC409	351MDC
INMARSAT 1			C	943	1.00	1.20	296	35786	.01	ETR	080090	SSUS-D		MDC409	352MDC
RESOURCES/POLLUTION			C	943	3.41	2.50	296	35786	.01	ETR	060090	SSUS-D		MDC409	341MDC
SP-LAB (SOL/ASTRO)	U-2		C								060090			GAC440	258STM
SPAS-01 STS PALLET		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060090	SPEC STR		MBB129	234MBB
SUBSAT FAC-FREE FLYE	S-9	OST	P	500.00	1.50	1.00	296	296	28.50		060090	UNIQ STA		STM180	179STM
SOIL MOISTURE	R-8	OSTA	O	408.00	3.50	4.60	278	465	56	ETR	060090	MMS		LEP379	173LEP

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
											060090				159STM
SPACELAB (SOL/TERR)											060090				138STM
SPACELAB(BMFT)											060090				121STM
OSTA-SORTIE(2 FLTS)											060090	OTV		STM180	096STM
GEO COMM PLAT STRUC	C-5	OSTA	P	6500	30.00	80	296	35786	.01	ETR	060090			DOD400	097LEP
SPACE TEST PGM		DOD	P	1000	1.00	4.00	TBD	TBD		TBD	060090			DOD400	079LEP
TRANSIT		DOD	A	164.00	2.10	.46	278	1100	90	WTR	060090			MDC409	067LEP
GRAVSAT BI	R-4	OSTA	A	4000	4.00	1.00	300	300	90	WTR	040090			STM180	065STM
ATMAS-ADV THERM MAP	R-6	OSTA	P	1450			700	700	98	WTR	060090			STM180	004STM
ST-SPACE TELESCOPE	A-3	OSS	A	11000	13.60	4.30	593	593	28.50	ETR	060090	SPEC STR		LEP379	016LEP
LG SOLAR OBSER		OSS	C	9800	16.20	4.60	350	350	28.50	ETR	060090			MDC180	323MDC
EARTH OBS/COMMUN.			C	1921	6.00	2.50	296	35786	.01	ETR	060090	SSUS-A		MDC409	329MDC
RESOURCES/POLLUTION			C	615	1.58	1.22	296	35786	.01	ETR	060090	SSUS-D		STM180	450STM
GEO COMM PLAT STRUCT	C-5		P	6500			296	296	.01	ETR	060090			SYR000	628STM
SOC-SP OPS-CTR	U-14		P								040090			SYR000	628STT
SOC-SP OPS-CTR	U-14		P								080090			STM180	632STM
ODSRS-ORB DEP SP REL	C-8		O	4300		28	278	35786		ETR	080090			STM180	664STM
MATERIAL EXP CARRIER	U-10	OSTA	C	10000	12.00	4.60			28.00	ETR	080091			LEP379	665LEP
OP LAND OBSER SYS B	R-5	OSTA	P	1700	4.30	2.20	700	700	98	WTR	060091	MMS		MDC409	666MDC
FOREIGN COMM.			C	943	3.70	2.50	296	35786	.01	ETR	060091	SSUS-D		GAC440	667GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	040091			GAC440	668GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	080091			GAC180	669GAC
ERBS-EARTH RAD BUDGT	C-4	OSTA	P	1134	4.00	2.10	296	600	46.00	ETR	060091	MMS		STM180	598STM
25 KW PW MOD		OAST	P	14000			435	435	28.50	ETR	060091			GAC440	587STM
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060091			FAM240	569FAM
SPACELAB(LIFE SCI)	L-1		C	14000							060091			GAC440	535STM
OSS(SP SCI,2 FLTS)			C								060091				

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
SPACELAB (EARTH ORB)	U-2		C								060091			GAC440	S21STM
DEF .ET SAT PGM		DOD	P	2500	6.00	2.00		835	99	WTR	060091			LEP	517LEP
SPACELAB (MATL PROC)	U-12		O								060091			GAC440	504STM
MPS-MATL PROCESS			C								060091			GAC440	490STM
GPS-GL POS SAT (2/YR		DOD	A	680	2.10	1.80		20190	63	ETR	060091	PAM		DOD400	483DOD
DEF SAT COMM SYS(DSC		DOD	A	1050	1.80	3.00		35786	.01	ETR	040091			DOD400	464DOD
DEF SAT COMM SYS(DSC		DOD	A	1050	1.80	3.00		35786	.01	ETR	080091			DOD400	465DOD
US E FOR COMM.			C	943	1.60	1.20	296	35786	.01	ETR	060091	SSUS-D		MDC409	430MDC
FOREIGN COMM/SBS (2/			C	615	1.60	1.40	296	35786	.01	ETR	020091	SSUS-D		MDC409	409MDC
FOREIGN COMM/SBS (4/			C	615	1.60	1.40	296	35786	.01	ETR	040091	SSUS-D		MDC409	410MDC
FOREIGN COMM/SBS (6/			C	615	1.60	1.40	296	35786	.01	ETR	060091	SSUS-D		MDC409	411MDC
FOREIGN COMM/SBS (8/			C	615	1.60	1.40	296	35786	.01	ETR	080091	SSUS-D		MDC409	412MDC
FOREIGN COMM/SBS (10			C	615	1.60	1.40	296	35786	.01	ETR	100091	SSUS-D		MDC409	413MDC
INMETSAT (3/91)			C	943	3.00	2.50	296	35786	.01	ETR	030091	SSUS-D		DC409	366MDC
INMETSAT (6/91)			C	943	3.00	2.50	296	35786	.01	ETR	060091	SSUS-D		MDC409	367MDC
INMETSAT (9/91)			C	943	3.00	2.50	296	35786	.01	ETR	090091	SSUS-D		MDC409	368MDC
INMETSAT (12/91)			C	943	3.00	2.50	296	35786	.01	ETR	120091	SSUS-D		MDC409	369MDC
FOREIGN COMM/EAR.OBS			C	667	3.40	1.90	296	35786	.01	ETR	060091	SSUS-D		MDC409	370MDC
FOR.COMM/EARTH OBS.			C	667	3.40	2.50	296	35786	.01	ETR	060091	SSUS-D		MDC409	371MDC
FOR.COMMUN/EARTH OBS			C	943	4.00	2.50	296	35786	.01	ETR	060091	SSUS-D		MDC409	355MDC
RESOURCES/POLLUTION			C	667	3.41	1.90	296	35786	.01	ETR	040091	SSUS-D		MDC409	337MDC
RESOURCES/POLLUTION			C	667	3.41	1.90	296	35786	.01	ETR	080091	SSUS-D		MDC409	338MDC
MAP GRAVITY FIELD/CO			C	615	1.00	1.40	296	35786	.01	ETR	060091	SSUS-D		MDC409	332MDC
SPAS-01 STS SAT		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060091	SPEC STR		MB3129	244MBB
SUBSAT FAC-FREE FLYE	S-9	OST	P	500.00	1.50	1.00	296	293	28.50		060091	UNIQ STA		STM180	180STM
SPACELAB(BMFT)											060091				139STM

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
OSTA-SORTIE(2 FLTS)											060091				123STM
SPACE TEST PGM		DOD	P	1000	1.00	4.00	TBD	TBD		TBD	060091			DOD400	100LEP
UNP PROG-URAN NEP PL	P-6	OSTA	C				296	49AU	98	WTR	060091			STP180	098STM
SCADM SOL CYLEDYN	S-13	OSTA	C	2600	6.00	2.00	278	575	28.50	ETR	060091	MMS		LEP379	094STM
SOLAR TERR OBS	S-12	OSTA	C	1000	80.00	9	400	400	57	ETR	060091			STM180	092STM
TRANSIT		DOD	A	164.00	2.10	.46	278	1100	90	WTR	060091			DOD400	080LEP
EARTH SURVEY		OSTA	P	772	3.00	1.50	296	910	99	WTR	060091	UNIQ STA		LEP379	056LEP
ADVANCED REL (4/91)		OSS	C	910	3.60	2.20	520	520	90	WTR	040091			LEP379	047LEP
ADVANCED REL (8/91)		OSS	C	910	3.60	2.20	520	520	90	WTR	080091			LEP379	048LEP
CRO-COSMIC RAY OBS	A-13	OSS	C	18000	15.00	4.50	278	400	56	ETR	060091	MMS		STM180	015STM
AXAF-ADV X-RAY AST	A-9	OSS	P	10000	11.50	3.10	278	400	28.50	ETR	060091	MMS		STM180	012STM
GRO-GAMMA RAY OBSERV	A-7	OSS	C	1100	6.00	4.50	296	400	28.50	ETR	060091	MMS		STM180	009STM
ENVIRON MONITOR		OSTA	C	1000	3.50	2.50	700	700	58	ETR	060091			LEP379	025LEP
SP-LAB (SOL/ASTRO)	U-2		C								060091			GAC440	303STM
RESOURCES/POLLUTION			C	615	1.58	1.22	296	35786	.01	ETR	060091	SSUS-D		MDC409	330MDC
ELECTRONIC MAIL			O	2720			296	35786	.01	ETR	060091	SEPS		MDC409	449MDC
MATERIALS EXP CARRIE	U-10	OSTS	C	10000	12.00	4.60			28.00	ETR	060092			STM180	670STM
GLOBAL DISASTER COMN			P	544	3.00	1.50	296	35786	.01	ETR	060092	SSUS-D		MDC409	671MDC
GOES-GEO ORB ENV SAT			P	1080	3.50	2.00		35786	.01	ETR	060092			MDC409	672MDC
STORMSAT			C	1600	6.00	3.70	296	35786	.01	ETR	060092	MMS/ILS		MDC409	673MDC
INMETSAT (4/92)			C	998	3.35	3.00	296	35786	.01	ETR	040092	TBD		MDC409	674MDC
INMETSAT (8/92)			C	998	3.35	3.00	296	35786	.01	ETR	080092	TBD		MDC409	675MDC
FOR.COMM/EARTH OBS			C	771	3.35	2.45	296	35786	.01	ETR	060092	SSUS-D		MDC409	676MDC
FOR.COMM/EARTH OBS			C	771	3.35	3.00	296	35786	.01	ETR	060092	SSUS-D		MDC409	677MDC
FOREIGN COMM/SBS (4/			C	726	1.50	1.80	296	35786	.01	ETR	040092	TBD		MDC409	678MDC
FOREIGN COMM/SBS (8/			C	726	1.50	1.80	296	35786	.01	ETR	080092	TBD		MDC409	679MDC

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILL NUMBER
FOREIGN COMM			C	998	3.66	2.74	296	35786	.01	ETR	060092	TBD		MDC409	680MDC
TELESAT			C	1130	2.44	2.44	296	35786	.01	ETR	060092	TBD		MDC409	581MDC
SBS			C	1130	2.44	2.44	296	35786	.01	ETR	060092	TBD		MDC409	682MDC
TDRS II	C-7	OSTDS	O	2267	6.10	3.35	296	35786	.01	ETR	060092	TBD		MDC409	683MDC
PUBLIC BROADCAST			O	1814	4.57	4.57	296	35786	.01	ETR	060092	TBD		MDC409	684MDC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	030092			GAC440	685GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	060092			GAC440	686GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	090092			GAC440	687GAC
GP LAND OBSER SYS C	R-5	OSTA	P	1700	4.30	2.20	700	700	98	WTR	060092	MMS		LEP379	688LEP
SUBMILLIM TELE	A-16	OSS	C	1000		4.50	278	1000	98	WTR	060092	UNIQ STA		STM180	612STM
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060092			GAC440	588STM
SPACELAB(LIFE SCI)	L-1		C	14000							060092			FAM240	570FAM
OSS(SP SCI,2 FLTS)			C								060092			GAC440	536STM
DEF MET SAT PGM		DOD	P	2500	6.00	2.00		835	99	WTR	060092			DOD400	518LEP
SPACELAB (MATL PROC)	U-12		O								060092			GAC440	505STM
MPS-MATL PROCESS			C								060092			GAC440	491STM
GPS-GL POS SAT (4/YR		DOD	A	680	2.10	1.80		20190	63	ETR	060092	PAM		DOD400	484DOD
DEF SAT COMM SYS(DSC		DOD	A	1050	1.80	3.00		35786	.01	ETR	040092			DOD400	456DOD
DEF SAT COMM SYS(DSC		DOD	A	1050	1.80	3.00		35786	.01	ETR	080092			DOD400	467DOD
PERSONAL COMM. DEMO			O	7250			296	35786	.01	ETR	040092	SSUS		MDC409	446MDC
SPAS-01 STS PALLET		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060092	SPEC STR		MBB129	235MBB
AMBIENT DEP_ IR TELE	A-17	OSS	C	16000		4.50	500	500	28.50	ETR	060092			STM180	199STM
SPACELAB (SOL/TERR)											060092				160STM
SPACELAB(BMFT)											060092				140STM
OSTA-SORTIE(2 FLTS)											060092				124STM
PRIV EARTH RES		US INDUS	P	1700	4.30	2.20	700	700	98	WTR	060092			LEP379	107LEP

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
SPACE TEST PGM		DOD	P	1000	1.00	4.00	TBD	TBD		TBD	060092			DOD450	114LEP
PERSONAL COMM. DEMO			O	7250			296	35786	.01	ETR	080092	SSUS		MDC409	104MDC
ALL WEATHER MICRO		CAN	P	2000	1.50	4.30	278	790	85	WTR	060092			LEP379	105LEP
SPS TEST ARTICLE	U-13	OST	C	136000			296	300GEO	28.50	ETR	080092	SEPS		MDC409	105MDC
X-RAY OBSERVATORY B		OSS	C	3550				400	28.50	ETR	060092			GSF260	106GSF
POLAIRE		CAN	P	440.00	1.00	2.50	300	300	90	WTR	060092			LEP379	103LEP
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	060092			STM180	101STM
NOSS-NAT. OCEAN SAT	E-6	OSTA	C	3816	10.70	4.50	278	700	87	WTR	060092	UNIQ STA		STM180	084LEP
ADV GEOL SAT		OSTA	A	2000			296	700	98	WTR	060092	TBD		LEP379	069LEP
UNP PROG-URAN NEP PL	P-6		C				296	49AU			060092	UNIQ STA		STM180	063STM
GLOB REG ATMOS MON		OSTA	O				700	700	98	WTR	060092			LEP379	053LEP
SP-_AB (SOL/ASTRO)	U-2		C								060092			GAC440	309STM
SPS TEST ARTICLE	U-13	OST	C	136000			296	300GEO	28.50	ETR	040092	SEPS		MDC409	455MDC
RESOURCES/POLLUTION			C	998	3.35	2.74	296	35786	.01	ETR	060093	TBD		MDC409	701MDC
EARTH SURVEY		OSTA	C	772	3.00	1.50	296	910	99	WTR	060093	UNIQ STA		LEP379	702LEP
FOR.COMM/EARTH OBS			C	771	3.35	2.45	296	35786	.01	ETR	060093	TBD		MDC409	702MDC
FOR.COMM/EARTH OBS			C	771	3.35	3.00	296	35786	.01	ETR	060093	TBD		MDC409	703MDC
FOR.COMM/SBS (3/93)			C	726	1.50	1.80	296	35786	.01	ETR	030093	TBD		MDC409	704MDC
FOR.COMM/SBS (6/93)			C	726	1.50	1.80	296	35786	.01	ETR	060093	TBD		MDC409	705MDC
FOR.COMM/SBS (9/93)			C	726	1.50	1.80	296	35786	.01	ETR	090093	TBD		MDC409	706MDC
FOR.COMM/SBS (12/93)			C	726	1.50	1.80	296	35786	.01	ETR	120093	TBD		MDC409	707MDC
US & FOR COMM			C	998	1.50	1.50	296	35786	.01	ETR	060093	TBD		MDC409	708MDC
US COMMUN. (4/93)			C	2720			296	35786	.01	ETR	040093	TBD		MDC409	709MDC
US COMMUN. (8/93)			C	2720			296	35786	.01	ETR	080093	TBD		MDC409	710MDC
FOREIGN COMM.			C	771	3.05	2.13	296	35786	.01	ETR	060093	TBD		MDC409	711MDC
FOREIGN COMM. (4/93)			C	998	3.66	2.74	296	35786	.01	ETR	040093	TBD		MDC409	712MDC

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
FOREIGN COMM (8/93)			C	998	3.66	2.74	296	35786	.01	ETR	090093	TBD		MDC409	713MDC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	020093			GAC440	714GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	040093			GAC440	715GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	060093			GAC440	716GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	080093			GAC440	717GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	100093			GAC440	718GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	120093			GAC440	719GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	040093			GAC440	720GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	080093			GAC440	721GAC
NOSS-NAT. OCEAN SAT	E-6	OSTA	C	3816	10.70	4.50	278	700	87	WTR	040093	UNIQ STA		STM180	722STM
EXTRATERR MAT PROCES	U-3	OSTA	A								060093			STM180	723STM
DEF MET SAT PGM		DOD	C	2700	6.00	2.00		835	99	WTR	060093			DOD400	724DOD
MATERIALS EXP CARRIE	U-10	OSTS	C	10000	12.00	4.60			28.00	ETR	080093			STM180	639STM
SPS TEST ARTICLE	U-13	OST	C	136000			296	300GEO	28.50	ETR	040093			MDC409	690MDC
SPS TEST ARTICLE	U-13	OST	C	136000			296	300GEO	28.50	ETR	080093			MDC409	691MDC
EARTH OBS/COMMUN			C	1921	6.00	2.50	296	35786	.01	ETR	060093	SSUS-A		MDC180	692MDC
EARTH OBS/COMMUN			C	1413	4.00	3.10	296	35786	.01	ETR	060093	IUS-2		MDC409	693MDC
FOR.COMMUN/EARTH OBS			C	998	4.30	3.00	296	35786	.01	ETR	060093	TBD		MDC409	694MDC
INMETSAT (3/93)			C	998	3.35	3.00	296	35786	.01	ETR	030093	TBD		MDC409	695MDC
INMETSAT (6/93)			C	998	3.35	3.00	296	35786	.01	ETR	060093	TBD		MDC409	696MDC
INMETSAT (9/93)			C	998	3.35	3.00	296	35786	.01	ETR	090093	TBD		MDC409	697MDC
INMETSAT (12/93)			C	998	3.35	3.00	296	35786	.01	ETR	120093	TBD		MDC409	698MDC
RESOURCES/POLLUTION(			C	726	3.35	2.13	296	35786	.01	ETR	040093	TBD		MDC409	699MDC
RESOURCES/POLLUTION(			C	726	3.35	2.13	296	35786	.01	ETR	080093	TBD		MDC409	700MDC
ASTEROID MULT RENDZ	P-7		O	2000	35.00	8	278		28.50	ETR	060093	IUS/SEPS		STM130	619STM
LUNAR POLAR ORB	P-8		O	300.00	6.00	4.00	278	400000	28.50	ETR	060093	SSUS-D		STM130	620STM

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
NR EARTH ASTER SAMPL	P-11		O	4000	70.00	5.00	278		28.50	ETR	060093	IUS/SEPS		STM180	621STM
25 KW PW MOD		OAST	P	14000			435	435	28.50	ETR	060093			STM180	599STM
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060093			GAC440	589STM
GPS-GL PCS SAT(2/YR)		DOD	P	750	2.90	2.10		20190	55	ETR	060093	PAM		DOD400	559LEP
OSS(SP SCI,2 FLTS)			C								060093			GAC440	537STM
SPACELAB (EARTH ORB)	U-2		C								060093			GAC440	522STM
SPACELAB (MATL PROC)	U-12		O								060093			GAC440	506STM
MPS-MATL PROCESS			C								060093			GAC440	492STM
SPAS-01 STS SAT		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060093	SPEC STR		MBB129	245MBB
LDEF	OI-10	OAST	C	4500	9.10	4.30	509	509	28.50	ETR	060093			STM180	186STM
SOIL MOISTURE	R-8	OSTA	O	408.00	3.50	4.60	278	465	56	ETR	060093	RMS		LEP379	174LEP
SPACELAB(BMFT)											060093				141STM
OSTA-SORTIE(2 FLTS)											060093				125STM
SP-LAB (SOL/ASTRO)	U-2		C								060093			GAC440	310STM
EDUCATIONAL TV			O	4535						ETR	060093			MDC409	448MDC
IR INTERFEROMETER	A-18	OSS	O	22500	100.00	20	400	400	28.50	ETR	060093			STM180	617STM
SPACE TEST PGM		DOD	C	1000	1.00	4.00	TBD	TBD		TBD	060093			DOD400	774DOD
SPACE TEST PGM		DOD	C	1000	1.00	4.00	TBD	TBD		TBD	060094			DOD400	775DOD
DEF MET SAT PGM		DOD	C	2700	6.00	2.00		835	99	WTR	060094			DOD400	725DOD
GRAV WAVE INTERFEROM			O	11250	2000	100	296	35786	.01	ETR	030094	TBD		GAC269	623GAC
MARS ADVANCED TECH	P-5		P	7000	6.00	4.50	278	.5AU	28.50	ETR	060094	IUS		STM180	624STM
UMP PROG-URAN NEP PL	A-6		C								060094			STM180	625STM
LUNAR BACK SAMP-RET	P-15		O								060094			STM180	626STM
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060094			GAC440	590STM
SPACELAB(LIFE SCI)	L-1		C	14000							060094			FAM240	571FAM
GPS-GL PCS SAT(4/YR)		DOD	P	750	2.90	2.10		20190	55	ETR	060094	PAM		DOD400	560LEP

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
OSS(SP SCI.2 FLTS)			C								060094			GAC440	538STM
SPACELAB (MATL PROC)	U-12		O								060094			GAC440	507STM
MPS-MATL PROCESS			C								060094			GAC440	493STM
DEF SAT COMM SYS(DSC		DOD	P	1130		4.30		35785	.01	ETR	040094			DOD400	468DOD
DEF SAT COMM SYS(DSC		DOD	P	1130		4.30		35786	.01	ETR	080094			DOD400	469DOD
SPAS-01 STS PALLET		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060094	SPEC STR		MBB129	236MBB
SPACELAB (SOL/TERR)											060094				161STM
SPACELAB(BMFT)											060094				142STM
OSTA-SORTIE(2 FLTS)											060094				126STM
SP-LAB (SOL/ASTRO)	U-2		C								060094			GAC440	315STM
NUCL WST DISP 10/YR		DOE	O	10430			296	.85AU		ETR	060094	1 SHUT		AIA120	454MDC
MATERIAL EXP CARRIER	U-10	OSTS	C	10000	12.00	4.60			28.00	ETR	080094			STM180	732STM
GRAV WAVE INTERFEROM			O	11250	2000	100	296	35786	.01	ETR	060094	TBD		GAC269	740GAC
GRAV WAVE INTERFEROM			O	11250	2000	100	296	35786	.01	ETR	090094	TBD		GAC269	741GAC
GRAV WAVE INTERFEROM			O	11250	2000	100	296	35786	.01	ETR	120094	TBD		GAC269	742GAC
INMARSAT			C	943	1.00	1.20	296	35786	.01	ETR	040094	SSUS-D		MDC409	743MDC
INMARSAT			C	943	1.00	1.20	296	35786	.01	ETR	080094	SSUS-D		MDC409	744MDC
EARTH OBS/COMMUN			C	1310	4.00	2.00	296	35786	.01	ETR	060094	SSUS-A		MDC409	745MDC
MAP GRAVITY FIELD/CO			C	615	1.00	1.40	296	35786	.01	ETR	060094	TBD		MDC409	746MDC
INMETSAT (4/94)			C	998	3.35	3.00	296	35786	.01	ETR	040094	TBD		MDC409	747MDC
INMETSAT (8/94)			C	998	3.35	3.00	296	35786	.01	ETR	080094	TBD		MDC409	748MDC
INMETSAT (12/94)			C	998	3.35	3.00	296	35786	.01	ETR	120094	TBD		MDC409	749MDC
RESOURCES/POLLUTION			C	680	1.52	1.83	296	35786	.01	ETR	060094	TBD		MDC409	750MDC
FOR.COMM/EARTH OBS			C	771	3.35	2.45	296	35786	.01	ETR	060094	TBD		MDC409	751MDC
FOR.COMM/EARTH OBS			C	771	3.35	3.00	296	35786	.01	ETR	060094	TBD		MDC409	752MDC
FOR.COMM/SBS (3/94)			C	726	1.50	1.80	296	35786	.01	ETR	030094	TBD		MDC409	753MDC

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
FOR.COMM/SBS (6/94)			C	726	1.50	1.80	296	35786	.01	ETR	060094	TBD		MDC409	754MDC
FOR.COMM/SBS (9/94)			C	726	1.50	1.80	296	35786	.01	ETR	090094	TBD		MDC409	755MDC
US & FOR COMM			C	998	1.50	1.50	296	35786	.01	ETR	060094	TBD		MDC409	756MDC
FOREIGN COMM (3/94)			C	998	3.66	2.74	296	35786	.01	ETR	030094	TBD		MDC409	757MDC
FOREIGN COMM (6/94)			C	998	3.66	2.74	296	35786	.01	ETR	060094	TBD		MDC409	758MDC
FOREIGN COMM (9/94)			C	998	3.66	2.74	296	35786	.01	ETR	090094	TBD		MDC409	759MDC
TDRS II	C-7	OSTDS	O	2267	6.10	3.35	296	35786	.01	ETR	060094	TBD		MDC409	760MDC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	010094			GAC440	761GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	020094			GAC440	762GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	030094			GAC440	763GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	040094			GAC440	764GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	050094			GAC440	765GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	060094			GAC440	766GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	070094			GAC440	767GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	080094			GAC440	768GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	090094			GAC440	769GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	030094			GAC440	770GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	060094			GAC440	771GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	090094			GAC440	772GAC
EXTRATERR MAT PROCES	U-3	OSTA	P								060094			STM180	773STM
SPACE TEST PGM		DOD	C	1000	1.00	4.00	TBD	TBD		TBD	060095			DOD400	776DOD
NUCL WST DISP 10/YR		DOE	O	10430			296	.85AU		ETR	060095	1 SHUT		AIA120	733MDC
DEF MET SAT PGM		DOD	C	2700	6.00	2.00		835	99	WTR	060095			DOD400	726DOD
GANYMEDE LANDER	P-16		O				278	5.2AU	28.50	ETR	060095	IUS		STM150	629STM
CLOSE SOLAR ORBITER	S-15		O				278	.1AU	28.50	ETR	060095	IUS		ST4	630STM
MERC ORBIT & LAND	P-7		O	500.00			276	.4AU	28.50	ETR	060095	SEPS		STM180	627STM

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
AUTO PLANET STAT	P-14	OSS	O	25000	80.00	15	400	400	28.50	ETR	060095			STM180	615STM
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060095			GAC440	591STM
SPACELAB(LIFE SCI)	L-1		C	14000							060095			FAM240	572FAM
GPS-GL POS SAT(2/YR)		DOD	P	750	2.90	2.10		20190	55	ETR	060095	PAM		DCD400	561LEP
OSS(SP SCI.2 FLTS)			C								060095			GAC440	539STM
SPACELAB (EARTH ORB)	U-2		C								060095			GAC440	523STM
SPACELAB (MATL PROC)	U-12		O								060095			GAC440	508STM
MPS-MATL PROCESS			C								060095			GAC440	494STM
ORB.DP.SP.R_Y.STAT.			O	8617			296	35786	.01	ETR	060095	2 SHUT		MDC409	453MDC
PERSONAL COMM. ADV.			O	8163			296	35786	.01	ETR	030095	3 SHUT		MDC409	447MDC
SP-LAB (SOL/ASTRO)	U-2		C								060095			GAC440	377STM
SPAS-01 STS SAT		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060095	SPEC STR		MB3129	246MBB
SPACELAB(BMFT)											060095				143STM
OSTA-SORTIE(2 FLTS)											060095				127STM
MATERIAL EXP CARRIER	U-10	OSTS	C	10000	12.00	4.60			28.00	ETR	080095			STM180	782STM
PERSONAL COMM. ADV.			O	8163			296	35786	.01	ETR	060095	3 SHUT		MDC409	783MDC
PERSONAL COMM. ADV.			O	8163			296	35786		ETR	090095	3 SHUT		MDC409	784MDC
OP LAND OBSER SYS A	R-5	OSTA	P	1700	4.30	2.20	700	700	98	WTR	060095	MMS		LEP379	785LEP
LARGE POWER MODULE	U-11	OSTS	C	29230					28.50		030095			STM180	786STM
EARTH SURVEY		OSTA	C	772	3.00	1.50	296	910	99	WTR	060095	JNIO STA		LEP379	787LEP
GLOBAL DISASTER COMM			P	544	3.00	1.50	296	35786	.01	ETR	060095	SSSUS-D		MDC409	788MDC
FOR.COMMUN/EARTH OBS			C	998	4.30	3.00	296	35786	.01	ETR	060095	TBD		MDC409	789MDC
INMETSAT (3/95)			C	998	3.35	3.00	296	35786	.01	ETR	030095	TBD		MDC409	790MDC
INMETSAT (6/95)			C	998	3.35	3.00	296	35786	.01	ETR	060095	TBD		MDC409	791MDC
INMETSAT (9/95)			C	998	3.35	3.00	296	35786	.01	ETR	090095	TBD		MDC409	792MDC
INMETSAT (12/95)			C	998	3.35	3.00	296	35786	.01	ETR	120095	TBD		MDC409	793MDC

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
RESOURCES/POLLUTION			C	726	3.35	2.13	296	35786	.01	ETR	040095	TBD		MDC409	794MDC
RESOURCES/POLLUTION			C	726	3.35	2.13	296	35786	.01	ETR	080095	TBD		MDC409	795MDC
FOR.COMM/EARTH OBS			C	771	3.35	2.45	296	35786	.01	ETR	060095	TBD		MDC409	796MDC
FOR.COMM/EARTH OBS			C	771	3.35	3.00	296	35786	.01	ETR	060095	TBD		MDC409	797MDC
FOR.COMM/SBS (3/95)			C	726	1.50	1.80	296	35786	.01	ETR	030095	TBD		MDC409	798MDC
FOR.COMM/SBS (6/95)			C	726	1.50	1.80	296	35786	.01	ETR	060095	TBD		MDC409	799MDC
FOR.COMM/SBS (9/95)			C	726	1.50	1.80	296	35786	.01	ETR	090095	TBD		MDC409	800MDC
FOR.COMM/SBS (12/95)			C	726	1.50	1.80	296	35786	.01	ETR	120095	TBD		MDC409	801MDC
US & FOR. COMM			C	998	1.50	1.50	296	35786	.01	ETR	060095	TBD		MDC409	802MDC
US COMMUN. (4/95)			C	2720			296	35786	.01	ETR	040095	TBD		MDC409	803MDC
US COMMUN. (8/95)			C	2720			296	35786	.01	ETR	080095	TBD		MDC409	804MDC
US COMMUN. (4/95)			C	998	4.30	2.75	296	35786	.01	ETR	040095	TBD		MDC409	805MDC
US COMMUN. (8/95)			C	998	4.30	2.75	296	35786	.01	ETR	080095	TBD		MDC409	806MDC
US COMMUN.			C	1587	7.62	2.75	296	35786	.01	ETR	060095	TBD		MDC409	807MDC
FOREIGN COMM (4/95)			C	998	3.66	2.74	296	35786	.01	ETR	040095	TBD		MDC409	808MDC
FOREIGN COMM (8/95)			C	998	3.66	2.74	296	35786	.01	ETR	080095	TBD		MDC409	809MDC
TELESAT			C	1130	2.44	2.44	296	35786	.01	ETR	060095	TBD		MDC409	810MDC
SBS			C	1130	2.44	2.44	296	35786	.01	ETR	060095	TBD		MDC409	811MDC
GRAV WAVE INTERFEROM			D	11250	2000	100	296	35786	.01	ETR	030095	TBD		GAC269	812GAC
GRAV WAVE INTERFEROM			D	11250	2000	100	296	35786	.01	ETR	060095	TBD		GAC269	813GAC
GRAV WAVE INTERFEROM			D	11250	2000	100	296	35786	.01	ETR	090095	TBD		GAC269	814GAC
GRAV WAVE INTERFEROM			D	11250	2000	100	296	35786	.01	ETR	120095	TBD		GAC269	815GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	010095			GAC440	816GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	020095			GAC440	817GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	030095			GAC440	818GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	040095			GAC440	819GAC

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	050095			GAC440	820GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	060095			GAC440	821GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	070095			GAC440	822GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	080095			GAC440	823GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	090095			GAC440	824GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	100095			GAC440	825GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	110095			GAC440	826GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	120095			GAC440	827GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	030095			GAC440	828GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	060095			GAC440	829GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	090095			GAC440	830GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	120095			GAC440	831GAC
EXTRATERR MAT PROCES	U-3	OSTA	C								060095			STM180	832STM
MATERIAL EXP CARRIER	U-9	OSTS	C	10000	12.00	4.60			28.00	ETR	050096			STM180	833STM
COSMIC-CON OPT SYS	A-20		D	11500			500	35786	.01	ETR	060096	HLV/OTV		STM180	834STM
COSMIC-CON OPT SYS	A-20		D	11500			500	35786	.01	ETR	090096	HLV/OTV		STM180	835STM
LARGE POWER MODULE	U-11	OSTS	C	29230					57	ETR	030096			STM180	836STM
EARTH OBS/COMMUN			C	1921	6.00	2.50	296	35786	.01	ETR	060096	SSUS-A		MDC409	837MDC
EARTH OBS/COMMUN			C	1413	4.00	3.10	296	35786	.01	ETR	060096	IUS-2		MDC409	839MDC
INMETSAT (4/96)			C	998	3.35	3.00	296	35786	.01	ETR	040096	T&D		MDC409	840MDC
INMETSAT (8/96)			C	998	3.35	3.00	296	35786	.01	ETR	080096	T&D		MDC409	841MDC
INMETSAT (12/96)			C	998	3.35	3.00	296	35786	.01	ETR	120096	T&D		MDC409	842MDC
RESOURCES/POLLUTION			C	726	3.35	2.13	296	35786	.01	ETR	060096	T&D		MDC409	843MDC
RESOURCES/POLLUTION			C	998	3.35	2.74	296	35786	.01	ETR	060096	T&D		MDC409	844MDC
FOR.COMM/EARTH OBS			C	771	3.35	2.45	296	35786	.01	ETR	060096	T&D		MDC409	845MDC
FOR.COMM/EARTH OBS			C	771	3.35	3.00	296	35786	.01	ETR	060096	T&D		MDC409	846MDC

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SATELLITE CHARACTERISTICS MARCH 9 1931.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
FOR.COMM/SBS(3/96)			C	726	1.50	1.80	296	35786	.01	ETR	030096	TBD		MDC409	847MDC
FOR.COMM/SBS (6/96)			C	726	1.50	1.80	296	35786	.01	ETR	060096	TBD		MDC409	848MDC
FOR.COMM/SBS (9/96)			C	726	1.50	1.80	296	35786	.01	ETR	090096	TBD		MDC409	849MDC
US & FOR COMM			C	998	1.50	1.50	296	35786	.01	ETR	060096	TBD		MDC409	850MDC
US COMMUN.			C	998	4.30	2.75	296	35786	.01	ETR	060096	TBD		MDC409	851MDC
FOREIGN COMM.			C	771	3.05	2.13	296	35786	.01	ETR	060096	TBD		MDC409	852MDC
FOREIGN COMM (3/96)			C	998	3.66	2.74	296	35786	.01	ETR	030096	TBD		MDC409	853MDC
FOREIGN COMM (6/96)			C	998	3.66	2.74	296	35786	.01	ETR	060096	TBD		MDC409	854MDC
FOREIGN COMM (9/96)			C	998	3.66	2.74	296	35786	.01	ETR	090096	TBD		MDC409	855MDC
TDRS II	C-7	OSTDS	O	2267	6.10	3.35	296	35786	.01	ETR	060096	TBD		MDC409	856MDC
FOREIGN COMM.			C	499.00	2.13	1.52	296	35786	.01	ETR	060096	TBD		MDC409	857MDC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	010096			GAC440	858GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	020096			GAC440	859GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	030096			GAC440	860GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	040096			GAC440	861GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	050096			GAC440	862GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	060096			GAC440	863GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	070096			GAC440	864GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	080096			GAC440	865GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	090096			GAC440	866GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	100096			GAC440	867GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	110096			GAC440	868GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	120096			GAC440	869GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	051596			GAC440	870GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	061596			GAC440	871GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	071596			GAC440	872GAC

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	020096			GAC440	873GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	040096			GAC440	874GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	060096			GAC440	875GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	080096			GAC440	876GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	100096			GAC440	877GAC
OP LAND OBSER SYS	R-5	OSTA	P	1700	4.30	2.20	700	700	98	WTR	060096	MMS		LEP379	878LEP
EXTRATERR MAT PROCES	U-3	OSTA	A								060096			STM180	879STM
SPACE TEST PGM .		DOD	C	1000	1.00	4.00	TBD	TBD		TBD	060096			DOD400	777DOD
NUCL WST DISP 10/YR		DOE	O	10430			296	.85AU		ETR	060096	1 SHUT		AIA120	734NDC
DEF MET SAT PGM		DOD	C	2700	6.00	2.00		835	99	WTR	060096			DOD400	727DOD
COSMIC-CON OPT SYS	A-20		O	11500			500	35786	.01	ETR	030096	HLV/OTV		STM180	634STM
MARS ADV TECH(RETURN	P-5	OSS	P				1.5AU	278	28.50	ETR	060096			STM180	635STM
NR EARTH ASTER(RETUR	P-11	OSS	O	150.00			40AU	278	28.50	ETR	060096	SEPS		STM180	636STM
ODSRS-ORE DEP SP REL	C-8		O	4300		28	278	35786	.01	ETR	040096			STM180	631GAC
ODSRS-ORE DEP SP REL	C-8		O	4300		28	278	35786	.01	ETR	080096			STM180	631STM
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060096			GAC440	592STM
GPS-GL POS SAT(4/YR)		DOD	P	750	2.90	2.10		20190	55	ETR	060096	PAM		DOD400	562LEP
OSS(SP SCI.2 FLTS)			C								060096			GAC440	540STM
SPACELAB (MATL PROC)	U-12		O								060096			GAC440	509STM
MPS-MATL PROCESS			C								060096			GAC440	495STM
DEF SAT COMM SYS(DSC		DOD	P	1130		4.30		35786	.01	ETR	040096			DOD400	470DOD
DEF SAT COMM SYS(DSC		DOD	P	1130		4.30		35786	.01	ETR	080096			DOD400	471DOD
SP-LAB (SOL/ASTRO)	U-2		C								060096			GAC440	389STM
SPAS-01 STS PALLET		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060096	SPEC STR		MBB129	237MBB
SOIL MOISTURE	R-8	OSTA	O	408.00	3.50	4.60	278	465	56	ETR	060096	MMS		LEP379	175LEP
SPACELAB (SOL/TERR)											060096				162STM

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
SPACELAB(8MFT)											050096				144STM
OSTA-SORTIE(2 FLTS)											060096				129STM
ST-SPACE TELESCOPE	A-3	OSS	A	11000	13.60	4.30	593	593	28.50	ETR	060096	SPEC STR		STM180	003STM
MATERIAL EXP CARRIER	U-10	OSTS	C	10000	12.00	4.60			28.00	ETR	080097			STM180	880STM
EARTH SURVEY		OSTA	C	772	3.00	1.50	296	910	99	WTR	060097	UNIQ STA		LEP379	881LEP
GOES-GEO ORB ENV SAT			P	1080	3.50	2.00		35786	.01	ETR	060097			MDC409	882MDC
STORMSAT			C	1600	6.00	3.70	296	35786	.01	ETR	060097	MMS/ILS		GAC440	883MDC
MAP GRAVITY FIELD/CO			C	615	1.00	1.40	296	35786	.01	ETR	060097	TBD		MDC409	884MDC
FOR.COMMUN/EARTH OBS			C	998	4.30	3.00	296	35786	.01	ETR	060097	TBD		MDC409	885MDC
OP LAND OBSER SYS C	R-5	OSTA	P	1700	4.30	2.20	700	900	98	WTR	060097	MMS		LEP379	886LEP
INMETSAT (3/97)			C	998	3.35	3.00	296	35786	.01	ETR	030097	TBD		MDC409	887MDC
INMETSAT (6/97)			C	998	3.35	3.00	296	35786	.01	ETR	060097	TBD		MDC409	888MDC
INMETSAT (9/97)			C	998	3.35	3.00	296	35786	.01	ETR	090097	TBD		MDC409	889MDC
INMETSAT (12/97)			C	998	3.35	3.00	296	35786	.01	ETR	120097	TBD		MDC409	890MDC
REASOURCES/POLLUTION			C	680	1.52	1.83	296	35786	.01	ETR	060097	TBD		MDC409	891MDC
RESOURCES/POLLUTION			C	726	3.35	2.13	296	35786	.01	ETR	040097	TBD		MDC409	892MDC
RESOURCES/POLLUTION			C	726	3.35	2.13	296	35786	.01	ETR	080097	TBD		MDC409	893MDC
FOR.COMM/EARTH OBS			C	771	3.35	2.45	296	35786	.01	ETR	060097	TBD		MDC409	894MDC
FOR.COMM/EARTH OBS			C	771	3.35	3.00	296	35786	.01	ETR	060097	TBD		MDC409	895MDC
FOR.COMM/SBS (3/97)			C	726	1.50	1.80	296	35786	.01	ETR	030097	TBD		MDC409	896MDC
FOR.COMM/SBS (6/97)			C	726	1.50	1.80	296	35786	.01	ETR	060097	TBD		MDC409	897MDC
FOR.COMM/SBS (9/97)			C	726	1.50	1.80	296	35786	.01	ETR	090097	TBD		MDC409	898MDC
FOR.COMM/SBS (12/97)			C	726	1.50	1.80	296	35786	.01	ETR	120097	TBD		MDC409	899MDC
US & FOR. COMM.			C	998	1.50	1.50	296	35786	.01	ETR	060097	TBD		MDC409	900MDC
US COMMUN. (4/97)			C	2720			296	35786	.01	ETR	040097	TBD		MDC409	901MDC
US COMMUN. (8/97)			C	2720			296	35786	.01	ETR	080097	TBD		MDC409	902MDC

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
FOREIGN COMM (4/97)			C	998	3.66	2.74	296	35786	.01	ETR	040097	TBD		MDC409	903MDC
FOREIGN COMM (8/97)			C	998	3.66	2.74	296	35786	.01	ETR	080097	TBD		MDC409	904MDC
COSMIC-CON OPT SYS	A-20		O	11500			500	35786	.01	ETR	030097	HLV/OTV		STM180	905STM
COSMIC-CON OPT SYS	A-20		O	11500			500	35786	.01	ETR	060097	HLV/OTV		STM180	906STM
COSMIC-CON OPT SYS	A-20		O	11500			500	35786	.01	ETR	090097	HLV/OTV		STM180	907STM
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	010097			GAC440	908GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	020097			GAC440	909GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	030097			GAC440	910GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	040097			GAC440	911GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	050097			GAC440	912GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	060097			GAC440	913GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	070097			GAC440	914GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	080097			GAC440	915GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	090097			GAC440	916GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	100097			GAC440	917GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	110097			GAC440	918GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	[illegible]			GAC440	919GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	[illegible]			GAC440	920GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	[illegible]			GAC440	921GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	061597			GAC440	922GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	071597			GAC440	923GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	081597			GAC440	924GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	091597			GAC440	925GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	020097			GAC440	926GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	040097			GAC440	927GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	060097			GAC440	928GAC

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	080097			GAC440	929GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	100097			GAC440	930GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	120097			GAC440	931GAC
LARGE POWER MODULE	U-11	OSTS	C	29230					90	WTR	030097			STM180	932GAC
EXTRATERR MAT PROCES	U-3	OSTA	C								060097			STM180	932STM
SPACE TEST PGM		DOD	C	1000	1.00	4.00	TBD	TBD		TBD	060097			DOD400	778DOD
NUCL WST DISP 10/YR		DOE	O	10430			296	.85AU		ETR	060097	1 SHUT		AIA120	735MDC
DEF MET SAT PGM		DOD	C	2700	6.00	2.00		835	99	WTR	060097			DOD400	728DOD
LG OPT UV TELESCOPE	A-21	OSS	O	22800	28.50	8	450	450	28.50	ETR	060097			STM180	636STM
COMET SAMPLE RETURN	P-10	OSS	O	3500	70.00	5.00	278		28.50	ETR	060097	IUS/SEPS		STM180	639STM
VENUS LANDER	P-12	OSS	O	550	2.00	1.00	278	.72AU	28.50	ETR	060097	IUS		STM180	640STM
AUTO MOBILE LUNAR SU	P-13	OSS	O	500.00	1.50	1.00	278	400000	28.50	ETR	060097	IUS		STM180	641STM
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060097			GAC440	593STM
SPACELAB(LIFE SCI)	L-1		C	14000							060097			FAM240	573FAM
GPS-GL PLS SAT(2/YR)		DOD	P	750	2.90	2.10		20190	55	ETR	060097	PAM		DOD400	563LEP
OSS(SP SCI.2 FLTS)			C								060097			GAC440	541STM
SPACELAB (EARTH ORB)	U-2		C								060097			GAC440	524STM
SPACELAB (MATL PROC)	U-12		O								060097			GAC440	510STM
MPS-MATL PROCESS			C								060097			GAC440	496STM
DEF SAT COMM SYS(DSC		DOD	P	1130		4.30		35786	.01	ETR	040097			DOD400	472DOD
DEF SAT COMM SYS(DSC		DOD	P	1130		4.30		35786	.01	ETR	080097			DOD400	473DOD
SP-LAB (SOL/ASTRO)	U-2		C								060097			GAC440	401STM
SPAS-01 STS SAT		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060097	SPEC STR		MBB129	247MBB
SPACELAB(BMFT)											060097				145STM
OSTA-SORTIE(2 FLTS)											060097				150STM
MATERIALS EXP CARRIE	U-10	OSTS	C	10000	12.00	4.60			28.00	ETR	080098			STM180	934STM

RUN DATE 12/11/81
SATELLITE CHARACTERISTICS MARCH 9 1931.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
100 M THIN APER TELE	A-22		O	10600		100	500	35786	.01	ETR	060098	HLV/OTV/		STM180	935STM
100 M THIN APER TELE	A-22		O	10600		100	500	35786	.01	ETR	090098	HLV/OTV/		STM180	936STM
100 M THIN APER TELE	A-22		O	10600		100	500	35786	.01	ETR	120098	HLV/OTV/		STM180	937STM
INMARSAT			C	943	1.00	1.20	296	35786	.01	ETR	040098			GAC440	938GAC
INMARSAT			C	943	1.00	1.20	296	35786	.01	ETR	080098			GAC440	939GAC
GLOBAL DISASTER COMM			P	544	3.00	1.50	296	35786	.01	ETR	060098	SSUS-D		MDC409	940MDC
INMETSAT			C	998	3.35	3.00	296	35786	.01	ETR	030098	TBD		MDC409	941MDC
INMETSAT			C	998	3.35	3.00	296	35786	.01	ETR	060098	TBD		MDC409	942MDC
INMETSAT			C	998	3.35	3.00	296	35786	.01	ETR	090098	TBD		MDC409	943MDC
FOR.COMM/EARTH OBS			C	771	3.35	2.45	296	35786	.01	ETR	060098	TBD		MDC409	944MDC
FOR.COMM/EARTH OBS			C	771	3.35	3.00	296	35786	.01	ETR	060098	TBD		MDC409	945MDC
FOR.COMM/SBS (3/98)			C	726	1.50	1.80	296	35786	.01	ETR	030098	TBD		MDC409	946MDC
FOR.COMM/SBS (6/98)			C	726	1.50	1.80	296	35786	.01	ETR	060098	TBD		MDC409	947MDC
FOR.COMM/SBS (9/93)			C	726	1.50	1.80	296	35786	.01	ETR	090098	TBD		MDC409	948MDC
FOREIGN COMM (3/98)			C	998	3.66	2.74	296	35786	.01	ETR	030098	TBD		MDC409	949MDC
FOREIGN COMM (6/98)			C	998	3.66	2.74	296	35786	.01	ETR	060098	TBD		MDC409	950MDC
FOREIGN COMM (9/95)			C	998	3.66	2.74	296	35786	.01	ETR	090098	TBD		MDC409	951MDC
TDRS II	C-7	OSTDS	O	2267	6.10	3.35	296	35786	.01	ETR	060098	TBD		MDC409	952MDC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	010098			GAC440	953GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	020098			GAC440	954GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	030098			GAC440	955GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	040098			GAC440	956GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	050098			GAC440	957GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	060098			GAC440	958GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	070098			GAC440	959GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	080098			GAC440	960GAC

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	090093			GAC440	961GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	100093			GAC440	962GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	110093			GAC440	963GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	120098			GAC440	964GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	041593			GAC440	965GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	051598			GAC440	966GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	061598			GAC440	967GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	071598			GAC440	968GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	081598			GAC440	969GAC
OTV-ORBIT TRANS VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	091598			GAC440	970GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	020098			GAC440	971GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	040098			GAC440	972GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	060093			GAC440	973GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	080098			GAC440	974GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	100098			GAC440	975GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	120093			GAC440	976GAC
EXTRATERR MAT PROCES	U-3	OSTA	C								060098			STM180	977STM
LARGE POWER MODULE	U-11	OSTS	C	29230					.01	WTR	030098			STM180	978STM
EXTRATERR INTELLIGEN	L-3	OSS	O			600		L3		ETR	090093			STM150	979STM
SPACE TEST PGM		DOD	C	1000	1.00	4.00	TBD	TBD		TBD	060098			DOD400	779DOD
NUCL WST DISP 10/YR		DOE	O	10430			296	.85AU		ETR	060098	1 SHUT		AIA120	736NDC
DEF MET SAT PGM		DOD	C	2700	6.00	2.00		635	99	WTR	060098			DOD400	729DOD
100 M THIN APER TELE	A-22		O	10600		100	500	35786	.01	ETR	030093	HLV/OTV/		STM180	616STM
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060098			GAC440	594STM
SPACELAB(LIFE SCI)	L-1		C	14000							060093			FAM240	574FAM
GPS-GL POS SAT (4/YR		DOD	P	750	2.90	2.10		20190	55	ETR	060093	PAM		DOD400	564LEP

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SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
OSS(SP SCI.2 FLTS)			C								060098			GAC440	542STM
SPACELAB (MATL PROC)	U-12		D								060098			GAC440	511STM
MPS-MATL PROCESS			C								060098			GAC440	497STM
GEOSTAT.COMM.PLAT.FC		COM	D	8617	30.00	80	296	35786	.01	ETR	060098	1 SHUT		MDC409	451MDC
SP-LAB (SOL/ASTRO)	U-2		C								060098			GAC440	424STM
SPAS-01 STS PALLET		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060098	SPEC STR		MBB129	238MBB
LDEF	DI-10	OAST	C	4500	9.10	4.30	509	509	28.50	ETR	060098			STM180	197STM
SPACELAB (SOL/TERR)											060098				153STM
SPACELAB(BMFT)											060098				146STM
OSTA-SORIIE(2 FLTS)											060098				131STM
MATERIAL EXP CARRIER	U-10	OSTS	C	10000	12.00	4.60				ETR	080099			STM180	980STM
EARTH SURVEY		OSTA	C	772	3.00	1.50	296	910	98	ETR	060099	UNIQ STA		LEP379	981LEP
FOR.COMM/EARTH OBS			C	998	4.30	3.00	296	35786	.01	ETR	060099	TBD		MDC409	982MDC
INMETSAT			C	998	3.35	3.00	296	35786	.01	ETR	030099	TBD		MDC409	983MDC
INMETSAT			C	998	3.35	3.00	296	35786	.01	ETR	060099	TBD		MDC409	984MDC
INMETSAT			C	998	3.35	3.00	296	35786	.01	ETR	090099	TBD		MDC409	985MDC
INMETSAT			C	998	3.35	3.00	296	35786	.01	ETR	120099	TBD		MDC409	986MDC
RESOURCES/POLLUTION			C	680	1.32	1.83	296	35786	.01	ETR	060099	TBD		MDC409	987MDC
RESOURCES/POLLUTION			C	726	3.35	2.13	296	35786	.01	ETR	040099	TBD		MDC409	988MDC
RESOURCES/POLLUTION			C	726	3.35	2.13	296	35786	.01	ETR	080099	TBD		MDC409	989MDC
FOR.COMM/EARTH OBS (			C	771	3.35	3.00	296	35786	.01	ETR	040099	TBD		MDC409	990MDC
FOR.COMM/EARTH OBS(8			C	771	3.35	3.00	296	35786	.01	ETR	080099	TBD		MDC409	991MDC
FOR.COMM/SBS (3/99)			C	726	1.50	1.80	296	35786	.01	ETR	030099	TBD		MDC409	992MDC
FOR.COMM/SBS (6/99)			C	726	1.50	1.80	296	35786	.01	ETR	060099	TBD		MDC409	993MDC
FOR.COMM/SBS (9/99)			C	726	1.50	1.80	296	35786	.01	ETR	090099	TBD		MDC409	994MDC
FOR.COMM/SBS (12/99)			C	726	1.50	1.80	296	35786	.01	ETR	120099	TBD		MDC409	995MDC

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
US & FOR COMM			C	998	1.50	1.50	296	35786	.01	ETR	060099	TBD		MDC409	996MDC
U S COMMUN (4/99)			C	2720			296	35786	.01	ETR	040099	TBD		MDC409	997MDC
U S COMMUN (8/99)			C	2720			296	35786	.01	ETR	080099	TBD		MDC409	998MDC
SPACE TEST PGM		DOD	C	1000	1.00	4.00	TBD	TBD		TBD	060099			DOD400	780DOD
NUCL WST DISP 10/YR		DOE	O	10430			296	.95AU		ETR	060099	1 SHUT		AIA120	737MDC
DEF MET SAT PGM		DOD	C	2700	6.00	2.00		835	99	WTR	060099			DOD400	730DOD
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060099			GAC440	595STM
GPS-GL POS SAT(2/YR)		DOD	P	750	2.90	2.10		20190	55	ETR	060099	PAM		DOD400	565LEP
OSS(SP SCI.2 FLTS)			C								060099			GAC440	543STM
SPACELAB (EARTH ORB)	U-2		C								060099			GAC440	525STM
SPACELAB (MATL PROC)	U-12		O								060099			GAC440	512STM
MPS-MATL PROCESS			C								060099			GAC440	498STM
DEF SAT COMM SYS(DSC		DOD	P	1130		4.30		35786	.01	ETR	040099			DOD400	474DOD
DEF SAT COMM SYS(DSC		DOD	P	1130		4.30		35786	.01	ETR	080099			DOD400	475DOD
SP-LAB (SOL/ASTRO)	U-2		C								060099			GAC440	457STM
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	120099			GAC440	330GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	100099			GAC440	329GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	060099			GAC440	327STM
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	080099			GAC440	328GAC
EXTRATERR MAT PROCES	U-3	OSTA	C								060099			STM180	320STM
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	081599			GAC440	316GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	091599			GAC440	317GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	061599			GAC440	314GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	071599			GAC440	315GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	051599			GAC440	313GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	041599			GAC440	312GAC

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	120099			GAC440	311GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	110099			GAC440	310GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	080099			GAC440	307GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	090099			GAC440	308GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	100099			GAC440	309GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	070099			GAC440	306GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	060099			GAC440	305GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	050099			GAC440	304GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	030099			GAC440	302GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	040099			GAC440	303GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	020099			GAC440	301GAC
OTV-ORBIT TEST VEH	T-10	OSTA	P	4000	1.00	.70	296	35786	.01	ETR	010099			GAC440	300GAC
SPAS-01 STS SAT		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060099	SPEC STR		MB3129	248MBB
SPACELAB(BMFT)											060099				148STM
FOREIGN COMM (4/99)			C	998	3.66	2.74	296	35786	.01	ETR	040099	TBD		MDC409	001MDC
FOREIGN COMM (8/99)			C	998	3.66	2.74	296	35786	.01	ETR	080099	TBD		MDC409	002MDC
COSMIC-CON OPT SYS	A-20		O	11500			500	35786	.01	ETR	030099	HLV/OTV		STM180	021STM
COSMIC-CON OPT SYS	A-20		O	11500			500	35786	.01	ETR	060099	HLV/OTV		STM180	022STM
COSMIC-CON OPT SYS	A-20		O	11500			500	35786	.01	ETR	090099	HLV/OTV		STM180	023STM
100M THIN APER TELE	A-22		O	10600		100	500	35786	.01	ETR	030099	HLV/OTV/		STM180	024STM
100M THIN APER TELE	A-22		O	10600		100	500	35786	.01	ETR	060099	HLV/OTV/		STM180	025STM
100M THIN APER TELE	A-22		O	10600		100	500	35786	.01	ETR	090099	HLV/OTV/		STM180	026STM
100M THIN APER TELE	A-22		O	10600		100	500	35786	.01	ETR	120099	HLV/OTV/		STM180	027STM
OSTA-SORTIE(2 FLTS)											060099				132STM
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	020099			GAC440	326GAC
MANNED GEO SORTIE	T-12	OSTA	C	35000			370	35786	.01	ETR	040099			GAC440	327GAC

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SATELLITE CHARACTERISTICS MARCH 9 1981.

SATELLITE	SAT. NO.	SPONSOR ORGANIZ.	CATE GORY	S/C MASS-KG	S/C LENG-M	S/C DIA-M	DELIVY ORB-KM	FINAL ORB-KM	ORBIT INCL	LAUNCH SITE	LAUNCH DATE	CARRIER	MANIF NUMBER	SOURCE	FILE NUMBER
OSTA-SORTIE(2 FLTS)											060000				133STM
SPACELAB(BMFT)											060000				150STM
SPACELAB (SOL/TERR)											060000				154STM
SPAS-01 STS PALLET		MBB	A	1800	1.50	4.20	296	296	28.50	ETR	060000	SPEC STR		MB3129	239MB3
COSMIC-CON OPT SYS	A-20		O	11500			500	35786	.01	ETR	030000	HLV/OTV		STM180	321STM
COSMIC-CON OPT SYS	A-20		O	11500			500	35786	.01	ETR	060000	HLV/OTV		STM180	322STM
OP _AND OBSER SYS A	R-5	OSTA	P	1700	4.30	2.20	700	700	98	WTR	060600	44S		LEP379	323LEP
COSMIC-CON OPT SYS	A-20		O	11500			500	35786	.01	ETR	090000	HLV/OTV		STM180	323STM
EXTRATERR MAT PROCES	U-3	OSTA	C								060000			STM180	324STM
MATERIAL EXP CARRIER	U-10	OSTS	C	10000	12.00	4.60				ETR	080000			STM180	325STM
SP-LAB (SOL/ASTRO)	U-2		C								060000			GAC440	465STM
MPS-MATL PROCESS			C								060000			GAC440	499STM
SPACELAB (MATL PROC)	U-12		O								060000			GAC440	513STM
OSS(SP SCI.2 FLTS)			C								060000			GAC440	544STM
GPS-GL POS SAT (4/YR		DOD	P	750	2.90	2.10		20190	55	ETR	060000	PAM		DOD400	566LEP
SPACELAB(LIFE SCI)	L-1		C	14000							060000			FAM240	575FAM
PEP (8 FLTS)	U-6		P	950			296	296	28.50	ETR	060000			GAC440	596STM
DEF MET SAT PGM		DOD	C	2700	6.00	2.00		835	99	WTR	060000			DOD400	731DOD
NUCL WST DISP 10/YR		DOE	O	10430			296	.85AU		ETR	060000	1 SHUT		AIA120	738NOC
SPACE TEST PGM		DOD	C	1000	1.00	4.00	TBD	TBD		TBD	060000			DOD400	781DOD